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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

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Do We Need a New Land Policy?

By LEONARD A. SALTER, JR.*

TO the scientist, experience is experiment. On the basis of past experience, we try new ways of doing things; and these experiments in turn add to the basis on which we conduct future operations.

In some branches of science, the scientist can go off by himself and try out new ideas for doing things; when they work, he is ready to commend the same type of actions to those who are interested in achieving like results. In this process, complete certainty may never be reached, but constantly we are expanding our basis for intelligent operations.

The social scientist is interested in the same process which is fundamental to all science—of learning what to do to get desired results by learning from experience. The social scientists are less likely to have the opportunity to initiate action merely to see what will happen as a consequence; but they do have to keep searching for experiences which reveal what happens when people behave in one way or another. Actually, he is not without experimental evidence, for the millions of people on the earth are forever trying out new ways, new experiments for getting the results they want. And sometimes these experiments are conducted in a fairly large way when great groups of people undertake new lines of action for specified purposes.

People seldom initiate new ways of doing things merely to see what will happen, yet when any change in our living habits is introduced, with a purpose in mind, the experience is in a very real sense experimental. If the scientific attitude is a criterion of intelligence, social intelligence is reflected in the willingness and ability of people to look upon their own experience as a series of experiments and to try new ways of doing things in the light of what they can learn from a study of their own and of others' experiences.

In many ways the United States has

* This paper was originally presented at the Seventy-sixth Annual Meeting of the Wisconsin Academy of Science, Arts and Letters, Madison, Wisconsin, April 1946. It is published posthumously.

shown itself to be a country in which people were relatively quick to try new ideas and to learn from experience. And, for a considerable period, Wisconsin attracted national attention as a leader among the states in this respect. In fact, our system of states' rights, which recently has come to be regarded as a conservative force, may have been, at least at one time, a progressive influence in our national life. For it is possible for the people in one part of our country to try out new ideas along certain important lines without waiting upon the willingness of the people in all the other states to try these ideas also. The progressive states have thus served as experimental social laboratories for their sister states as well as for themselves.

When one looks over the history of the United States, one can find a myriad of examples of the willingness and ability of the American people both to adapt and to adopt new social ideas. Whether these innovations resulted from our human ingenuity or were thrust upon us by our environment probably would vary from one instance to another. But the fact remains that our history is rich with social experiments of various kinds. And, in respect to some of the most immense problems of social organization, our national experience constitutes experimental tests on which the rest of the world has an eye.

One of the greatest experiments represented in the history of this country is the land system which we have established. Note that I have not said that our land system is necessarily a successful experience in the sense that it has given us what we have been after. Rather, I have said that our land policy experience represents one of the world's greatest social experiments, for reasons to which we may turn. But the point of this paper is not to establish the success of this experiment, but to emphasize the experimental nature of the American land system and to point out how important it is that we look at it critically and try to learn something from it.

The most profound development in the last few centuries of world history unquestionably has been what Karl Polanyi calls the Great Transformation —the transition of society from a feudal to a market economy. The world has seen many changes in the past few hundred years, but none surpass in importance the shift of the very foundation of social organization from land to the market-place.

Under feudalism, the common denominator of all social relations was the tenure under which men held land. The whole fabric of feudal society was tacked down at all strategic points to the land. Political power, social prestige, material wealth, and justice—all of these for any man were related to and dependent upon his land tenure status.

During the past few hundred years, the people of the world have been emancipating themselves from this feudal heritage of a society organized on the basis of status—and status rooted in the land. Sometimes we in the United States are apt to forget that feudalistic customs constitute a heavy barrier in many lands against the introduction of democratic principles of social organization. We forget that, in many parts of the world, agrarian feudalism lasted until late in the nineteenth century; that, in some countries, the break from feudalism has begun only since World War I; and that, in parts of many countries even to-day, a paramount social question is, "How can we break the fetters of a feudalistic land system?"

The problem of eliminating the vestiges of agrarian feudalism is of course

bound up with the equally difficult problem of determining upon some other land system that will allow men the freedom and equality which feudalism does not allow, but that will still give men that degree of security which will assure the needed production of food and raw materials, the conservation of natural resources, and human satisfactions in living. In all parts of the world there are literally millions upon millions of people to whom this question is the great unsolved riddle of social organization. And a pertinent question for us, too, is whether we have solved this riddle here in our own country.

We here in the United States may not appreciate the importance of this question—its importance either to ourselves or to the peoples of the world. We have quickly become an industrialized nation rather than an agricultural nation—in only the last fifty years the proportion of our population on farms has fallen from over fifty percent to less than twenty percent. Under these circumstances we are apt to forget that much of the world's population is agricultural rather than urban, and that these people of necessity judge both their personal freedom and their economic well-being in terms of the amount of land to which they have access and the conditions under which they can get it. Because every country of the world is interested in finding out what may be their alternatives, what choices they may have in working out a satisfactory land system, and because this issue is the dominant one in many of the most densely populated areas of the world, experiments in devising ways to allocate the surface space of the earth among men are of critical significance if we want a prosperous and peaceful world.

In respect to these problems of land economics which are of global importance, the experience of the United States in its land policies is extremely significant. It so happens that the founding and settlement of this continent coincided with the breaking up of feudalism in Europe. In fact, one of the driving forces which encouraged people to leave the older countries and to seek their homes and livelihoods in this part of the world was their discontent with the land systems of the countries which they left and the disorganization of society which was involved in the rearrangement of the land systems in those countries.

In fact, the earliest settlements in this country were begun before Europe had moved very far away from medieval feudalism, and so there were various attempts to transplant feudalistic land practices in the early American colonies. Many of these attempts withered and died—they simply could not survive on a continent where there was ample land and a shortage of labor, nor were they long tolerated by people who came across the sea in large part because they wished to be rid of those social institutions under which a man's opportunities depended upon his birth and his land tenure status rather than upon his own ability and initiative. Except in a few instances, those feudal land systems which had not perished earlier on their own account were abolished in the American Revolution and in the early days of the new republic. The Ordinance of 1787 forbade the establishment of feudal land tenures in the new federal public domain, which then comprised the Northwest Territory. In the older colonies feudal tenure practices were abolished, one after the other. In southern New York the land estates of Loyalists were confiscated during the Revolution and sold at public auction. In central New York, to be sure, it took longer to abolish feudal land system traces; for it was not until about 1850 that the New York state anti-rent wars,

interestingly described in Henry Cristman's recent book, *Tin Horns and Calico,* brought an end to the powerful position of the large estate owners around Albany.

In the southern colonies, feudal land tenures did not last long among the white settlers, but later of course slavery was practiced. This pre-feudalistic practice was not wiped out until a bloody Civil War had been fought.

By all these measures the American people have tried constantly and energetically to see to it that those social customs which had limited man's freedom by tying him in a class status to the land would not become common in these United States. So far, we have reviewed the events which assured that the American land system would not be feudal. But we had to do more than that; it was necessary also to develop some other system by which there would be an orderly allocation of rights in land and an advantageous use of our resources. What is more, we had a practically virgin continent to which we could apply whatever system of land tenure and utilization we wished. To be sure, much of the wild continent was inhabited by Indians; but only in a minor way did the Indian culture have any effect, and certainly it was no great hindrance to the application of the land system which we decided to institute. As an aside, it should be mentioned that, while our treatment of the Indians has not been something to boast of, nevertheless, we went through the motions of formally extinguishing Indian titles to land before we established our own and of allocating some substitute lands for those which we took. In other countries it was more common to take the land of the natives and to take the natives as property with the land on which they had dwelt—that is, to put them into slavery or serfdom under the control of those who held the new rights in the land.

So anxious were we Americans to be completely rid of feudal bonds, we did our best to establish what we thought was an opposite type of land system. We attempted to dispose of the vast stretches of our continent by giving title to land to private individuals, and the individuals who received these titles received for themselves and their heirs and assigns forever as nearly complete freedom in respect to the use of their land as has been granted by any land system anywhere established.

In a very real sense, then, it may be said that the history of rural America represents a colossal experiment in land policy. Starting with almost a clean break from the feudal system which girdled the earth, we have had the chance to try to establish on a naturally rich and practically uninhabited continent a new land system. This new system, that of private ownership of land, has, to be sure, been introduced elsewhere. But the strong remnants of previous centuries of feudalism put important obstacles in its way. Furthermore, in this country, by *private ownership of land* we have meant almost one hundred percent full rights for the owner to do as he pleased with that land.

This tremendous American land policy experiment has been part and parcel of the whole American experiment in democracy. As millions of people in other parts of the world emerge only now from the feudalism which we renounced a century and a half ago, as millions of others emerge from an even more primitive type of life onto the threshold of the brave new world which we all hope is to become the heritage and joy of all the peoples of the globe in the coming years —these peoples and their leaders will indeed be casting about, trying to learn from the experience of the countries

which have longer enjoyed the adoption of newer ways of doing things. They will and do want to know whether our great experiments have worked. Whether or not we take time to assess our own experience, our own achievements and failures, others will be interested in doing it for themselves. Recently, for example, a very interesting book has been published by a land economist in Kenya, East Africa. What was the purpose of this book? Let me quote from its foreword:

"In all societies the relation between the people and the land they occupy and exploit is a matter of the greatest interest and moment. This is especially so among primitive peoples. They have not developed foreign trade. . . . Even internal trade is not large. There is no division of labor. . . . The food they eat, the clothes they wear, the fuel they burn, the shelter they erect, the household . . . utensils which they use, are all obtained by the labor of their hands from the ground they till or which their animals graze, and the wild produce of the land to which they have access. Land to them is the means of life. . . .

"Infiltration of European ideas is proceeding apace. The land now provides not only the necessary means of subsistence but a surplus which can be exchanged for blankets, cotton goods, bicycles, bus and train fares, and the gewgaws of civilization which their souls love, not to speak of the wherewithal to pay taxes.

"Little imagination is needed therefore to appreciate the importance in the eyes of primitive people of their land. . . .

"The forms of land tenure are closely related to, and in fact form one aspect of social institutions in general. A close correlation will be found everywhere between contemporary social and political institutions and land tenures. Feudal society, democracy, aristocracy and modern authoritarianism each stamp their impress upon the forms of land tenure.

"In one sense the forces bearing down on colonial populations to-day are not new forces. . . . It is only that their impact is more sudden. In Europe the change from the feudal society of the middle ages to modern democratic institutions was spread over centuries. . . . The stages of evolution in the past can be discerned and their effects observed. The same forces may be expected to produce in native territories in the twentieth century much the same effects as those they produced in Europe in the preceding eight centuries. The same path is being trod, the intrusion of a money economy, the change from subsistence to commercial farming, the rise of economic freedom and economic opportunism, the progress from custom to contract as a basis of economic relations.

"Colonial territories . . . those peopled by . . . more or less primitive peoples, are at present in a stage of tutelage under the guidance of one or the other of European powers.

"The forms of land tenure must bear a close relation to the kind of society it is proposed to establish. In applying means to desired ends, however, it is essential to have some measure of the probable effects of the means it is proposed to employ. In regard to the tenure of agricultural land we cannot know too much about the various forms which do exist and have existed, the circumstances in which they have operated and the effects they have produced. Comparative study is more than merely desirable, it is absolutely necessary if the danger of producing results widely different from those intended is to be reduced to a minimum.

"The subject is of staggering importance. . . . The current of rural life cannot be made to stand still. It might be allowed to flow unchecked into the shifting sands of chaos, peopled by moneylenders, engrossers, landlords, dividers, and subdividers, comminuters and inefficients. It might be diverted into the valley of the shadow of chiefs and great landlords who sit like ogres at the shallows. It might be canalized into a great irrigation channel with feeder channels, field channels, sluices and trim tight banks, the benefits of which are seen in every little field. Perhaps it should also be added that [rural life] might be canalized into a mighty channel whose sluices are opened only to those who bring acceptable offerings to the controllers of the floodgates."[1]

With this purpose in mind, this land

[1] H. M. Leake, "Further Studies in Tropical Land Tenure," reprinted from *Tropical Agriculture*, Government of Spain Printing Office, Trinidad, 1937.

economist in East Africa makes a quick survey of the countries of the world, hoping to find in their experience some ideas for a land tenure system for the backward countries which, if adopted, might produce desirable results. To what conclusion does he come? Does he find here in the United States or elsewhere a system of land-holding which he feels would give the poorer countries of the world what they need? Let me quote from his concluding paragraph:

"There lies before us a choice of evils. . . . In the territories whose needs are mainly in mind in this essay, it is hardly conceivable that any system could be worse, in the long run, than 'individuality run riot.' In these territories, bureaucracy is in any case an established fact, and if 'indirect rule' has any justification at all it should be able to fill the same place in relation to land tenure as it does in the sphere of taxation and jurisdiction. Is there a *via media*?"

If an economist, looking for some ideas for emergent primitive areas of the world, turns his back on the system which he calls "individuality run riot," that still does not cancel our experiment out as a failure, but it certainly ought to prod us into an assessment of our own land policies. But first, I might call your attention to another conclusion reached by another foreign scholar who also looks not only at American experience, but at world-wide experience in reference to land policies. Karl Polanyi, to whom I have already made previous reference, believes that the attempt in many parts of the world to put land along with everything else onto a completely commercial basis has proved disastrous. He puts it this way:

"What we call land is an element of nature inextricably interwoven with man's institutions. To isolate it and form a market out of it was perhaps the weirdest of all undertakings of our ancestors."[2]

[2] Karl Polanyi, *The Great Transformation* (New York: Farrar and Rinehart), 1944.

These appraisals sound altogether pessimistic. But what have our own American students of land policy to say? Is there any national interest in assessing the American experiment in land policy? If so, what do they tell us? How does one go about making a judgment of the success or failure of a social experiment as gigantic as our experiment in establishing a new land system on this broad continent?

First of all, we may note that there are many voices in this country which tell us that our land system is in an awful mess. For example, (and while I most certainly would not want to be accused of quoting him as an authority) Louis Bromfield's most recent book, which deals with agriculture and which has somehow managed to stay on the best seller lists for a considerable period of time, says this:

"Our own history of bad agriculture and worn-out soils is almost a record among the peoples of the world. . . . Today a large proportion of our small farmers exist upon an income and living standards below those of the average European peasant. . . . They exist upon lands which should have been left in managed forests, lands which were never suited for agriculture and were worn out and destroyed within a generation or two, or they exist upon rich soils which were destroyed by greed and bad farming within a century or less. The problem is not only an economic one; it is a social one as well for the rural population of the nation is not increasing from the stock of good, healthy farmers established upon good lands but from the wretched 'peasant' population settled upon poor and worn-out lands."

We do not, however, have to turn to Bromfield for statements which emphasize the degree to which our land resources have been destroyed. A recent book by the former director of the Harvard Forestry says that we are facing what he calls a "soil crisis." In his words, "Modern man faces the ominous question whether civilization can learn how to

conquer soil erosion before soil erosion has destroyed civilization."

I do not know whether it is merely an illustration of professional egocentrism, but it appears almost as though the greater an authority a man is in a natural science field, the more vehement he is in expressing the concern over the wastage of the natural resources which are the object of his attention.

For my own part, I am of the opinion that a good deal of the alarm-ringing that has been going on in respect to the physical condition of our resources has been over-done; yet maybe that is necessary to shake some people out of their complacency and utter disregard for a question which is after all of fundamental importance.

But it can still be shown that even those who are not inclined to exaggerate the physical condition of our natural resources are still far from satisfied with the results which our land system experiment have given us. Charles Abrams, for example, in his stimulating book, *Revolution in Land,* has this to say:

"American has tremendous resources. Most of them are still undeveloped. Some of them are even unsurveyed. It has more land for every essential purpose than our probable maximum population can ever use. It has almost all the things a modern civilization needs. It has almost all the manifold factors of production required for the fullest functioning of a rich and variegated social system. Here, if anywhere on the earth, one might expect to see the old pattern of individual exploitation flourish. Yet land in America has become the heritage of the underprivileged."[8]

Is this the outcome of our vast, brave experiment in trying to work out a new, democratic, non-feudalistic system of land-holding on this continent? Certainly if Thomas Jefferson, who saw in the new American land system the very essence of the new democracy, were to learn that it was now concluded that land in America, far from serving as a foundation stone for a glorious, free rural citizenry, had become only the "heritage of the underprivileged"—surely he would feel that the experiment had failed. Here, after a hundred and fifty years of trying to make our new land system work, Abrams asks the same question that Jefferson was propounding when our republic was born: "What chance is there that someday a consistent and correlated land program will at last be evolved?"

Before proceeding to look into the possible answers to this question you may want to know whether some of these quotations I have given represent a concensus of the students of land policy or whether they are extremist positions, unduly pessimistic views. After all, anyone could make out a case in quite different terms. In terms of production and output, for example, the American record is a hard one to beat. From after World War I until World War II, for example, this country was worried, not over the shortage of its supply of raw materials, but was bothered by such a surplus of food and fibre supplies that we adopted artificial schemes for destroying a part of our output. And during World War II, our farm economy turned out an all-time record of production, our people as a whole ate better than they ever did before, and today, in spite of a few scarcities, we are almost ashamed of the things we have available in comparison with the miserable conditions which prevail in most parts of the world. In short, whatever may be the failures of our land system, failure to produce the goods our people want is not among them.

It can be said further that at least for

[8] Charles Abrams, *Revolution in Land* (Harper and Bros.), 1939.

a considerable proportion of our rural people, they live in decency and comfort and they enjoy a degree of freedom such as farmers in other parts of the world can hardly imagine. Furthermore, in view especially of the incomes that our rural people have earned during the recent years it is difficult perhaps to accept some of the descriptions of rural poverty and suffering which may be given to show the failure of our land experiment.

What, then, is the trouble? Is it that the photographers have given us too many dramatic pictures of horrible gullies on the land and too few examples of crop yields higher than ever before? Is it that the abnormal years of the depression have impressed us with pictures of rural poverty and farm foreclosures and have caused us to overlook the existence of thousands of profitable farm units and to discount the good incomes which farmers earn now and in other prosperous years?

Or is it that we are asking too large a question? After all, perhaps it is impossible to say whether or not an experiment as large as our experience with land policy over a century and a half, in a country as large and as diverse as ours, is or is not a success or failure. It would seem to make a very great difference whether one were to appraise our land system in terms of the conditions of negro sharecroppers in the Mississippi delta or of farmers in Dane county, Wisconsin; whether one were to look at the farm factories of California or the dairy farms of Vermont; whether one were to think in terms of the low-price, depression, and drought years of the early 1930's or the war-time boom of the early 1940's.

There is no doubt, I think, but that much of what has been said and written about our land system has been out of perspective because of the concentration of attention on a particular region or a particular time. Carey McWilliams, for example, has rendered good service in bringing to light some of the conditions which exist where factories in the field exist, just as John Steinbeck has done. Whatever can be done to bring about improvement in such situations is all to the good; we cannot be proud of the conditions which have developed in these monopolized farming areas. But less than one percent of the nation's farms and only about six percent of its farm land is operated by managers. In other words, the factories in the field are mighty important where they exist, but they do not exist in very many places.

Similarly, the problems of the truly poverty-stricken status of the hill farmers of the Southern Appalachians and the near-serfdom of the colored sharecroppers in the South must be marked down as arising in part out of special regional conditions and as calling for special types of remedial action.

Arthur Moore, who has written about the best book on American agriculture that has appeared in the past few years, says that the family farm of the middlewest corn belt represents the American rural norm. As he puts it:

"The corn belt was peopled by those who expected a life of freedom, security, and social democracy. It is the common denominator of American rural life. The plantations, the cattle baronies, the wheat industrialists, the California factories in the fields, the Appalachian hill farmers, the sharecroppers black and white—all these have been given character and clarity. Yet they are merely eccentric to the corn belt norm."[4]

Moore also says that the corn belt farm "is the essence of the American dream." Yet he too finds, as he puts it, that "a shadow lies across" the American "promise of a richer national life in the peace."

[4] Arthur Moore, *The Farmer and the Rest of Us* (Boston: Little, Brown and Co.), 1945.

To find that promise, he suggests that it is necessary to look "beyond food to the farmers and beyond them to the land."

To what conclusions, then are we forced? On the one hand, the concensus seems overwhelming that somehow, for some reason, our land policies have not given us what we hoped for. On the other hand, they have not completely failed us by any means. Are we to conclude that there is some good and some bad and that no predominant source of difficulty can be found? Do we have to conclude that there are difficulties here and troubles there; that there are hard times and good times; but that these things have to be looked at piecemeal and treated as special cases? Or is there any common denominator of the difficulties which are so obvious everywhere at certain times and in some places at all times? Are these adversities in total so extreme as to warrant an adverse decision as to the experiment in land policy which this great nation has been carrying on? Is the judgment so adverse as to warrant immediate recommendation of some completely new land system such as land nationalization, the collectivization of landed property, the adoption of a widespread system of corporate private ownership? These and other completely new systems of land tenure are being advocated by some; and even some of our most conservative thinkers, I expect, would be willing to embrace some of these alternatives if they felt that the continuation of our land system in the future were to be no different from what it has been in the past.

It seems to me that the evidence does not yet show that the land system we have envisaged for the United States is so completely wrong as to warrant its abandonment. Yet there certainly have been enough weaknesses show up in it that it is fully understandable why other peoples of the earth who are still trying to extricate themselves from the bondage of feudalism might look our system over and decide that, no thank you, they'll look around elsewhere for their ideas. And, regardless of what influence our experience may have on the choices of the millions of foreign peoples who are confronted with the job of setting up their new twentieth-century land systems, the evidence is unquestionably such as to require our own attention to our own land system for our own future peace, prosperity, and national happiness.

I do not think that the Jeffersonian dream of a prosperous rural America—of a countryside of intelligent, progressive farmers, of a productive rural economy that rolls out the foods and fibres our city people need and want, of a land system that assures the tillers of the soil freedom and equality of opportunity through the ownership of the land which each of them tills—I do not believe that that goal is completely out of reach. I do not think that our experiment proves that that ideal is unattainable, although a great many people do. One nationally prominent economist has recently characterized it as a "will-o-the-wisp" which we had better stop chasing. No, I do not believe that we have to give up this hope; Yet, the evidence does seem to clearly show that we do need some very forthright action if we are going to attain it; and furthermore, if we do not soon take some forthright steps to see to it that we attain it, a worse choice may be thrust upon us.

The mistake we have made has not been that of trying to establish a system of independent land ownership with a high degree of freedom for the owners of land to do what they want with it. The mistake we have made has been rather to

assume that the system would work automatically—that, once land had been put into private ownership, all of the potential benefits of such ownership would immediately accrue to our society; and further that the system would perpetuate itself.

What our experiment has shown, and some excellent historians and economists like Hibbard of Wisconsin, Gates of Cornell, and Shannon of Illinois have proven that these tendencies cropped up early in our experiment—what our experiment has shown is that the mere putting of land into private property in and of itself does not assure that such land will remain in the hands of those who use it. If the nineteenth century experiment in establishing new land systems was, as Polanyi says, the "weirdest" of undertakings, what made it weird is not that we tried to give freedom and title to the private individuals who operate our farms, but that we have acted as though those titles to land could be treated just like the rights to any other commercial goods—could be thrown on the commercial market like titles to consumable goods.

What we should learn from our great experiment is that when the ownership of land is made a purely commercial transaction—when people, be they farmers, investors, or idle by-standers, have the right not just to put their land to such physical use as they please, but also have the right to encumber the title with debt, to split it up horizontally and vertically, to place whatever price on it they wish, in short to kick it around like any other scrap of commercial paper—when we interpret private landed property with this sort of thing in mind, then we learn that, far from being a self-perpetuating system, we have a self-destructive system; one in which the tillers of the soil have a decreasing equity in the land they cultivate, one in which the tillers of the soil have increasing insecurity in society, and finally, one in which the very richness of the soil itself is robbed and the soil itself erodes away.

The evidence is piling up faster as we turn up our social science microscopes to a higher power to examine the process, that under what we may call the free-play of private fee simple land ownership, our system runs *commulatively,* against the sort of a rural economy which has ever been an integral part of the American democratic ideal. It is not self-correcting; it is not self-perpetuating. Rather, there is a persistent tread-mill effect. When land is lost out of the hands of the farmer who tills it, there is no offsetting mechanism—rather, that action itself makes it all the more difficult for another bona fide farmer to acquire ownership of it.

It is this mistaken notion of automaticity which seems to be the source of trouble in the American land system experiment. It is this erroneous notion that constitutes an eccentric cog in our experimental machine—it lies deep down inside the works so that we forever overlook it, but even when the machine seems to be ticking nicely as it does during a land value boom period like the present one, even then, that eccentric cog is turning over and shunting the machine into a strained condition which eventually becomes noticeable and finally becomes disastrous.

I cannot take the time here to describe this cog in greater detail, but I might take time to be a little more explicit about its effects, so that you can see its pervasiveness. Its name is a big one—overcapitalization. It sticks out in many forms but it is the common denominator for the difficulties and frustrations that

inhere in our land system—in California and in Eastern Kentucky, in Wisconsin and New Mexico, in depression-ridden years and in high-prosperity. All kinds of factors promote its operation—high rural birth rates is one of the most important. But unemployment and low wages in city jobs accentuate the movement of this eccentric cog in our land policy machine, and increases in farm incomes accentuate it; and governmental income guarantees that are tied to land also accentuate it so that many of our otherwise important efforts to aid the farmers' situation are nullified and defeated in the land market.

What our experiment seems to show most clearly is that once private property is established in farm land, if commercial transactions are relied upon automatically to perpetuate the system, then under certain circumstances there will be a cumulative tendency toward land subdivision until the rural population is pressed into miserably small and inadequate and worn-out farm units such as are found in the Appalachian highlands. Under other circumstances there will be a cumulative tendency towards land monopoly until the rural population is squeezed out of any real rights to land such as is the case in plantation areas of the south and the factory farms of the west; and, under other circumstances, family farmers on family-sized farms will come to own an increasingly smaller part of the value of their land such as has been the case in the corn belt.

The trouble seems to have been that we have assumed the idea of operator ownership of our farm lands to be synonymous with just private ownership. We have interpreted the freedom and opportunity of an individual to be master of his own farm to include not only his right to operate his farm by his own decisions, but to include the right of anyone to have pretty near 100-percent rights to encumber the property with debt, to sell it in whole or in part, to transmit it to others under all sorts of arrangements, to place whatever value might be set upon it.

In other words, having established the right of the individual farmer to operate his land as he pleased, we find that we also have established the right of moneylenders to write mortgages with terms that can never be met. We have also established the right of all and sundry to transfer lands at prices which can only mean misery and squalor for the family of the farmer who is going to have to pay those prices. We have also established the right of landlords to rent and farmers to lease land under terms which we know can only result in impoverishment both of the soil and of the farm family. We have established the right of people to retire on the value of their farm like they would on the value of a bank-book, drawing not only on its annual income but also if necessary on its capital or asset value, as though the disappearance of a section of land were comparable to the disappearance of a bank-book balance. We have established the right of people to pulverize land titles and to complicate them so that the sheer burden of keeping the records straight becomes an unnecessary expense of our land system. Isn't it obvious that these so-called freedoms of our land system are something other than that freedom of private ownership of our farm land which our American ideal has always encompassed?

The real question is whether or not we can devise ways and means not to weaken but actually to strengthen and give assurance to the people who work our farms their right to find economic opportunity and equality and security in the holding of their land; and at the

same time to find and to put into operation devices that will protect our land and the people who work it from these cumulative and self-destructive tendencies which operate when private ownership of the soil is interpreted to mean the right to use land titles as financial play-things, as though the title to an American farm should be just as much a pawn for commercial manipulation as a share of wildcat stock.

If we have the ingenuity to devise these ways and the courage and the interest to put them into effect, we need not abandon the idea of giving our farm people individual security and freedom in the operation of their farms. Nor will we jeopardize our sources of supplies of food and fibre; nor will we risk the deterioration of our natural resources. To attain the Jeffersonian ideal of rural democracy, we need not give up the whole idea of individual freedom, but we will have to keep individuality from running riot.

American Versus German City Planning

By MARTIN WAGNER*

Preface

IF one reads the forerunner of the German peace treaty, the so-called "Berlin Protocol" of July 1945, one could conclude that the German people never experienced a democratic government, and for this reason should "be given the opportunity to prepare for the eventual reconstruction of their life on a democratic and peaceful basis." The signers of the protocol, apparently, were not aware of the fact that it was German soil on which the cradle of European democracy was built, and from which it was carried not only to England but to all other countries of Europe, and even into Russia, where its spirit of association, there called "mir," withstood communistic theories so successfully that Lenin and Stalin had to incorporate it into their bolshevistic system. But it is not the claim to democratic primogeniture that causes the author to go back to pre-feudal times of human association; it is rather the fact that the German concept of planning is so deeply rooted in historical developments that Americans, less familiar with European history, could easily mistake it for ultra-red radicalism.

I. The Historical Aspect of Planning

The German scholar, Georg Ludwig von Maurer, and the English scholar, Sir Henry Sumner Maine,[1] tell us that the pre-feudal Teutonic village community could be viewed as a model pattern of democracy. Each family owned in the "village mark" its own lot, but owned the "arable mark" and the "common mark" in common. The precinct of the family house could be entered by nobody but the "householder" and those under his patria potestas. Standing within the pale of his homestead the Teutonic free-man was a "lord" and standing outside that pale, i.e., in the economy of the mark, he was a "commoner." "These two distinct aspects . . .," says Sir Henry Maine quoting Morier, "should not be lost sight of. In them are reflected the two salient characteristics of the Teutonic race, the spirit of individuality, and its spirit of association." Indeed, one can hardly think of a better democratic society than that incorporated in the pre-feudal German villages. Such a village community was not the concept of the intellect; it grew out of the deepest roots of human nature, moral sentiments, and economic conditions. The customary laws of the pre-feudal village community formed and dissolved themselves imperceptibly and in closest association with the conscious and sub-conscious feelings of all the community members concerned. "A person aggrieved," writes Sir Henry Maine, "complains not of an individual wrong but of the disturbance of the order of the entire little society." If one member of such a community committed a misdeed or a crime the whole village would feel guilty, or if another member set up a new standard of moral conduct and human behaviour, the whole community would be uplifted by it. Such village communities were planned and built by the thousands in Germany's pre-feudal age.

And so were their less numerous *service* communities, the towns! In the 12th and 13th centuries more than 350 new towns appeared in northern Germany. At that time the craft-guilds were born

* Harvard University.

1 See: Georg Ludwig von Maurer, *Einleitung zur Geschichte der Mark-, Hof-, Dorf-und Stadt-Verfassung*, Munchen: 1853. Sir Henry Sumner Maine, *Village-Communities in the East and West*, London: 1871.

and, simultaneously, a newly planned urban "cartel-economy." A sort of social and economic companionship in fortune and misfortune took root in the craft-guilds. "Let us all share the same lot; if any fails let all bear it," was the motto of one of them. And so strong was the feeling for companionship that the craft estates settled down in separate town sections, the names of which—like Butcher Lane or Weaver Lane—still indicate today where former sub-communities lived and worked for the town community. More than that: these craft communities established their own market regulations and market tolls. Moreover, the whole town and its hinterland, its "space of nourishment," was regarded as an economic unit. Zoning, then, meant more than it means today; it meant reserving living and working-space for single craft communities, for merchant communities, for farmer communities; and it meant planning the economic and social security of the town community as a whole.

The "new-deal" of the craft-guilds with the landed nobles and the richer merchants found its social and administrative expression in the two-chamber system of medieval town representation, i.e., the first chamber, in Germany called "Senat" or "Magistrat," and the second chamber, the Town Council or Town Meeting. Although the tasks and functions of these communal bodies have changed in the course of time; and although the electoral franchises of the different classes have been restricted in part and expanded in part in many battles for social justness, it cannot, nevertheless, be denied that up to the present time no better system of communal representation has been found than that which grew organically out of the pre-feudal village community and the medieval town community.

But there are other fragments of historic heritage which European cities owe the medieval towns, and among them is one that the author should like to call "far-sighted economic planning." In times when warfare between the European state sovereigns was the rule, the many free towns would have been foolish not to prepare for sieges and to fortify themselves physically as well as economically. What military defense meant at that time we are just beginning to grasp. It meant rationing; it meant having the municipal warehouses full of grain, meat, and fat; in short: it meant communal penetration into all the various branches of human life. The free towns had to have an eye upon their own currency, their own scales and measurements, their hygienic institutions, their public safety laws—and all that they did. And they did it on a scale which makes mayors and councilors of our generation appear ineffective. We need only to imagine what it must have meant for the free town of Cologne to spend in 1379—a year of peace—82 percent of all municipal receipts for military and diplomatic services. Or let us imagine that in 1180 the same town built its fortifications on such a huge scale that the inhabitants of 1882, then numbering about 250,000 souls, could still find room enough within a walled area such as that provided in the 12th century. Such a planning and building policy of a medieval town democracy really lived up to the grandeur incorporated in its religious and mundane symbols: its cathedrals and town halls.

Travelling through medieval towns, one is tempted to ask oneself: how could it happen that these small towns whose freemen would have been considered poor by any American citizen of today could yet invest so much working power in their solidly built burgher houses, communal warehouses, guild halls, town

halls, churches, and cathedrals? Was it a kind of building fever or religious possession that inflamed them to the performance of work of so high a quality? Was it a fanatic outburst of self, family, and community preservation? Maybe their performance resulted from all these motives, and also from the sheer materialistic fact that towns and bishoprics of that time made a flourishing business out of recoining each year their total specie in order to prevent the people from putting their savings into the chest. Thus the flight into capital goods, like buildings, was not only aided but purposely abetted.

But all these money manipulations can at best explain the "what" of quantities but not the "how" of qualities that shadow us as we walk through medieval towns. Why was it that the simple burgher house should in its whole appearance, its height, its material, and its furnishing—as happened in Greece—fall so far behind the community buildings? Rich people could have their splendid mansions, it is true, but it would have been considered a matter of very bad taste to have any private building overtop a town hall, church, or cathedral. The dwarfed Trinity Church of Wall Street has its exact opposite in the many cathedrals of the medieval towns whose spires not seldom reached up to a height equal to half the diameter of the towns' circular built-up areas. This contrast is the more conspicuous since the communities of the medieval times comprised rarely more than 10,000 souls when their building masters designed their plans and laid the foundations for skyscraping spires of moral and religious confessions.

II. Planning at the Crossroads

It is quite natural that the heavier weight of the historic heritage of the German towns influenced their 19th and 20th century development to a greater degree than the very much diluted and multifarious heritage of the American towns could ever do. Apart from the fact that the founding of new towns had ceased in Germany long before 1800 and that, therefore, German town development was bound to be influenced by accumulated local and regional heritage, American urbanization, at that time, was still in its state of infancy, and where it grew and spread it was almost bare of those social, legal, and cultural standards of action which continued to impress themselves upon the growing towns of Germany.

The author takes the turn of the century purposely as the key-date in town development because it was around 1800 when—in Europe as well as in America—town development became greatly influenced by two of the most constructive as well as destructive forces of the world: by *capital* and by its obedient servant the *machine*. City developments such as those that occurred after 1800 in London, Paris, Berlin, or New York, would have been unthinkable if masses of capital had not been channeled into masses of buildings and masses of machines. Adam Smith's "free play of power" and James Watt's steam engine made the machine-age spread over the whole world, burying under its wheels much of the culture and tradition that the handicraft-age had built up since the 12th century. Individual enrichment had to have its way and fifteen hundred years of village community spirit and five hundred years of cultivated communal town actions became a sort of nuisance or, at best, an inconvenient obstacle

in the pursuance of individual enrichment. "The railroads," W. H. Vanderbilt could say in 1882, "are not for the benefit of the dear public. That cry is all nonsense. They are built for men who invest their money and expect to get a fair percentage on the same." Thus, "rugged" individualism near 1900 had already reached a strength against which planned communalism could not have a chance to succeed. The French writer, Tocqueville, tells us, though, in his book on *Democracy in America,* published in 1835, that "individualism" meant at that time in this country "a kind of individual anarchy—the conduct of any person who arbitrarily cut himself off from his family, friends, and society." But such a notion of individualism disappeared soon enough, as Mr. Vanderbilt's classic dictum proves. And it disappeared so fast that President Hoover, at the beginning of the 20th century, is reported[2] to have won "rounds of popular applause when he prefixed an adjective to it and spoke of 'rugged' individualism."

But rugged individualism did not flourish to such a degree in Germany. There it could not so easily overrun what five hundred years of communal administration had built up in laws, ordinances, and municipal institutions. And above all, there was a human element that presented an insurmountable barrier to rugged individualism of mere money makers; and that was, on the one side, a well educated and incorruptible body of officials whose civil service system encompassed all social classes and was, on the other side, a hierarchy of kings, dukes, counts, and barons who saw to it that their social sovereignty was not impaired by commercial or industrial empires of the "upstarts" and "new-rich." Therefore, they tried to support and to strengthen what democratic and autocratic self-government had built up in form of tradition, symbols, art, and culture during the past centuries. And it was quite in line with this general policy of the privileged classes that the Prussian King Friedrich Wilhelm III, after his defeat by Napoleon Bonaparte, empowered his Minister, Friedrich von Stein, to reinstate by his famous Städteordnung of 1808 (the municipal Magna Charta for all Prussian communities) what self-government had been acquired during the golden age of the medieval craft-guilds and town leagues. "Confidence," Stein wrote, "enobles man, perennial tutelage bars his maturity." Thus the German cities and towns reinforced their vested rights —just when capital and machines stepped into their triumphal car—and kept them until that evil day when Hitler came to rule over Germany.

Their city charters did not change very much after 1808. The two-chamber system has proved its usefulness during static and dynamic periods of city development; and certain stipulations in Stein's municipal Magna Charta—like those that made the mayor a primus inter pares among his fellow commissioners, that ordered the mayor and commissioners to be elected for 12 years with full pension rights, and that laid down a policy that all officials be learned experts in their special profession—prevented the German cities from becoming the hunting ground of mean politicians for political spoils. Neither could the spoils policy penetrate into the municipal government from below. There it was barred by the ancient civil service system that saw to it that every

[2] See: Charles A. and Mary R. Beard, *A Basic History of the United States, 1944,* page 361.

official brought to his office personal and professional qualifications as prescribed by the municipal statute and approved by the municipal board of control of the State.

This stabilized German system of municipal administration contrasts so greatly with the fluctuating American city government that the uninitiated are tempted to attribute its success to "un-American autocracy" in running municipal affairs. But there was nothing un-American in German municipal government as there was nothing un-German in the American system of self-government, at least not up to 1800 when, to explain this fact by an example, the city of Boston administered its municipal affairs according to the same system that was applied by the German cities, i.e., the two-chamber system with a mayor presiding over the board of aldermen as a primus inter pares. When Charles Bulfinch, one of the most famous architects this country has ever begotten, served from 1800 to 1815 as Boston's finance commissioner, that city had no permanent debts, but it had a will to plan and build that it has never had before nor since. Unfortunately, Boston changed its city charter several times during its growth from about 25,000 souls in 1800 to 560,000 souls by 1900. And there was scarcely one of the many possible charter changes which was *not* put on trial, and was *not* adjusted to a selfish clique of spoils-hungry politicians, except the one of English and German origin according to which metropolises, like London and Berlin, were still operating with great efficiency in 1930.

It is easy to tell why Boston today is one of the worst administered cities of this country. It is so because it submitted itself to hypocritical politicians whose aim was not to make government an efficient instrument of the people, by the people, and for the people, but an effective instrument for party prebends. No administrator of experience and reputation would deny that it is a culpable misconception of democracy to let the "people in the street" elect the mayor or any other expert commissioner. The people cannot judge professional qualities, either of judges for the Supreme Court or of professional administrators, builders, treasurers, or health commissioners. Leaders should be elected by subleaders, i.e., in our case by the city council to whom they ought to be responsible and who can impeach them if they fail in their duties. But the vicious policy of creating ever larger and larger voting precincts and ever fewer and fewer members of the city council has estranged the voters not only from their representatives and from municipal affairs in general,[8] but has turned the once highly honored post of "city father" into a salaried position in a party machine. The history of Boston's municipal charter revision leaves no doubt about the disdain and despair that many distinguished city fathers felt when short-term election periods were adopted for mayors and commissioners. They knew that it was sheer hypocrisy to assume that a "man-in-the-street mayor" could in two, or even four, years become acquainted with a government machinery consisting of one or two dozen departments, comprising some 15,000 or—as in the case of New York—even 150,000 employees, and yet instill into this machinery the service spirit necessary for long-term planning problems. What these short-term mayors could do was, at best, to spend two years bringing themselves up to the level of laymen

[8] In 1944 only 30% of Metro-Boston's voting population appeared at the polls of the municipal election, while Metro-Berlin's voters seldom went below a 70% figure of participation.

mayors and spend the rest of their terms on "eye-wash" projects to catch the electorate for a second term.

The neglect of the two cardinal principles of efficient city administration, i.e., the principle of long-term periods of office and the principle of sub-leaders electing leaders, has been all the more pernicious since it has been coupled with a third major fallacy, namely, the belief that the shortcomings of the short-term direct election policy could be made up by concentrating administrative power almost exclusively in the hands of the mayor. Thus "the strong man," himself a tool in the hands of party politicians, has been able to reduce city administration to a mere show-off policy and has robbed municipal government of that kind of consistency, integration, and collaboration without which long-term planning aimed toward utmost efficiency and lasting effect is simply unthinkable. Since planning means nothing if not carried out by a competent body of spirited representatives of the people, we must dig still a bit deeper into the facts that made German cities plan and build for long-term periods and that made American cities the playfield of short-term party politics.

III. Municipal Government in Decomposition

Genuine democratic community planning cannot but be based on the two salient characteristics of democratic government: "the spirit of individuality and the spirit of association." The overemphasized individualism that the 19th century installed in the private as well as in the public sphere of life made large-scale communal actions ineffective and it decomposed the once so outstanding communal spirit of association into a horde of single pressure groups.

Although backed up by a weather-beaten civil service system and by many custom-made and legally enacted laws, German municipal government could not be spared entirely from paying tribute to the 19th century spirit of rugged individualism. The pressure put upon this form of government, however, never went so far as to decompose the municipal bodies of self-government; disintegration appeared only in the form of all sorts of obstructions made by single members of single parties or by single party domination. Germany's municipal government never went so far as to "farm out" municipal activities and duties to privately administered charity organizations, community funds, or to all sorts of "authorities," "boards" and "committees" of half-public and half-private character. There was even no other power but public opinion that could hinder the expansion of municipal activities into private actions, such as acquiring land for non-municipal purposes, operating transportation facilities, and making profits out of public utilities. Thus, the elemental prerequisites for long-term planning were not lacking, and planning itself was not imperiled by split authorities. And where such split authorities appeared during the growth of autonomous communities in metropolitan or regional areas, as was the case in Berlin, Hamburg, and the Ruhr district, the proper state authorities did not fail to bring about concerted actions for the control of such developments.

Let us be clear on one thing: if city planning shall not remain mere paper-planning it must have unified communal authorities to prepare, finance, and execute planned projects; and since city planning aims by its very nature at long range goals it must be sponsored, buttressed, and executed by a stable muni-

cipal authority of constancy and consistency. Now, where is this unified communal authority to be found in our American cities?

There are planners in this country who eulogize "the American genius for organization and yet *more* [4] organization" that [5] produced so great a variety of forms and procedures for the support of planning. Scratching the skin of that said "genius for organization" one discovers at once that a "genius" it was, indeed, who decomposed our municipal authorities and who tries now to substitute for them some sort of tame, tepid, and timid "booster" organization. It was the "genius" of rugged individualism who multiplied himself in all kinds of "Miracle Mile Associations." It should not take more than the intelligence of a blind hen to find out that all these pressure groups can achieve nothing of lasting value. They waste their time and money in ephemeral efforts and foster only duplication and confusion. And above all, they are helpless if they approach the ingenious "do-nothing-devil" who occupies in the town hall the chair of authority over the "to be or not to be" of planning and building. Up to now, no single case has come to the author's knowledge where privately sponsored, large-scale planning projects could have evaded the sanction of the proper municipal bodies. And where such large-scale planning projects of mere municipal character were sponsored by state or federal authorities, their execution effected only a further confusion rather than a clarification of the final issues involved in planning and replanning our cities. Evading the main issue, i.e., the reorganization of the legal and financial agent of long-range planning projects, means nothing but burying every hope of ever seeing our cities replanned and rebuilt.

There are times and circumstances when evasion creates more damage than attack, and when the choice of the lesser of two evils boomerangs both towards the tactician. And that, I think, is just what happened when inexperienced planners began to propound in this country planing boards of neither strictly municipal nor strictly private character, but boards supposed to sail as "neutrals" between the Scylla and Charybdis promontories. How could such emasculated planning boards ever work? He who thought such boards could free planning from the grip of politicians saw them drift against the shallow shore of sabotage; and he who thought to steer them into the ports of private interests found these harbors bare of men and means. Experienced planning skippers know that they have to reckon with swift changes in the composition of such "fifty-fifty" planning boards, and therefore prefer to take the helm on such boards that guarantee them constancy in municipal bodies and guarantee them departments staffed with long-term expert appointees.

But apart from personal factors, the detachment of the planning boards from all the other municipal departments cannot but push them into the vacuum of stratospherical planning whence no way leads back to the earth. Are the proponents of detached planning boards not aware of the fact that planning *must* degenerate into mere paper-planning à la Ecole des Beaux Arts if it is not brought into daily contact with the twelve or more municipal departments which furnish the planning raw material and whose task it is to put plans into successive realization? Even if there are some naively-minded planners who think

[4] Italics are mine.—M. W.

[5] See: Charles W. Eliot, "Citizen Support for Planning and Development," *Planning and Civic Comment*, April 1945.

that the completion of a paper plan entails by force its execution, would they dare to aver that plan-realization does not mean team-work among *all* municipal departments? And does not mean steady changes and adjustments of their plans to changing practical and social and technical requirements? And would they assert that all this can be achieved without having the mayor in charge of coordination and collaboration take the lead, and keep it, in carrying out long-range planning projects? If there are still planners who believe in miracles produced by paper-work they should be reminded that dreams are silver but deeds are golden!

IV. Municipal Government in Recomposition

Just as America could not escape its hectic urbanization, neither could Germany. Some comparative figures and facts for one city in each country may indicate what happened when the machine-age replaced handicraft cities of handicraft sizes.

The city of Boston grew from 25,000 people in 1800 to 560,000 people in 1900, which means that it multiplied its 1800 population about 22 times in one hundred years. The city of Berlin grew at the same time from 172,000 to 1,865,000 people, thus multiplying its 1800 population only about 11 times. But these figures do not reveal the real growth of both cities. If we include the satellites of Boston and Berlin and follow up their development until 1930, we arrive at a figure of 2,300,000 people for Metro-Boston and 4,275,000 for Metro-Berlin, i.e., a population increase for Boston's 83 cities and towns of 90 times the figure of 1800 and, for Berlin's eight cities, 59 towns and 27 villages of 25 times. One could conclude from these figures that Metro-Boston was in much greater need of government consolidation than was Metro-Berlin and yet the metropolitan area of Berlin got its first unifying superstructure in form of the County Council of Greater Berlin in 1911 and its first unified municipal government in 1920, while the metropolitan area of Boston did not go beyond some few "purpose district" alliances for sewerage, parks, water, and rapid transit. What was the cause for Berlin's faster and Boston's slower reorganization?

The "independent" cities and towns of both metropolitan areas succumbed to the 19th century spirit of isolational individualism. But the Berlin area, much more encumbered with the heritage of medieval guild democracy on the one side, and much more subjected to royal mercantilism on the other, never went so far as to lose sight of the common-sense fact that jurisdictional boundary lines cannot separate what industry and commerce have forged into an "economic unit." It is true, jurisdictional bookkeeping caused the mother-city of Greater Berlin—as it caused the mother-city of Greater Boston—not to incorporate the "illegitimate" children that industry and commerce had brought up outside of mother's municipal jurisdiction. Neither wanted them under their communal roofs at an age when their growth and education swallowed more taxes than they could earn by their own efforts; and when these step-children *had* grown up and *had* fattened themselves at the free cribs of industry and commerce, they turned the tables and showed their mother cities the cold shoulder. Now entrenched behind their own municipal bookkeeping they refused to relieve their mother-cities from their higher tax rates. That family quarrel started in Berlin and Boston around 1870 and lasted in Berlin

until 1920, while it still continues in Boston.

What brought Berlin's 94 communities back under one family roof was nothing but common sense, a common sense nourished by a reawakening spirit of association that revolted against the 19th century spirit of isolational individualism. It was not so difficult to convince the voters of Metro-Berlin that municipal bookkeeping is only a relatively small part of the overall bookkeeping to which an "economic unit" of a metropolitan area is committed. It did not take much effort to persuade the people of Charlottenburg that their tax rate of, say, 22 dollars has only municipal bookkeeping value if compared with the tax rate of 40 dollars [6] in Berlin. Living within an "economic unit" the Charlottenburg people cannot escape paying the taxes of Berlin because they pay them, although indirectly, if they buy food and clothes that have been shipped through Berlin or have been processed or manufactured in Neukolln; and they have to pay Berlin taxes if they visit Berlin theaters or pay fees for doctors and lawyers practicing in the center of Berlin. After all, all these goods and services are in one way or another loaded with taxes levied by *any* community in the compound body of a metropolitan area. The difference is only that every community has to levy so much *more* taxes or to forego so much *more* public services as the lack of common planning and common actions in the public sphere of an "economic unit" must entail.

To convince the voters of Greater Berlin of such common-sense facts was, indeed, not very difficult. One did not need booster organizations or pressure groups to do so. What one needed were only two, though powerful, means of persuasion: first, an independent and enlightening press, a press deeply devoted to genuine public opinion; and second, a splendid exhibit of facts and embodiments of what a unified metropolitan community would look like and how it would work in the interest of the common weal. And these two means stood at the disposal of spirited men striving and aiming at nothing else but the revival of the spirit of association.

If there had been Berlinians to complain about newspaper support in public affairs, they would have remorsefully retracted every such association if they could have seen the brew of "public opinion" their Bostonian brothers have to take or leave. They would have cheered their free high-level press if they could have known on what low level Bostonian writers are forced to work. The Bostonian press will be the last one to escape "rugged" individualism. "The press will become free," wrote the editor of the *Chicago Sun,* Robert Lasch, in an *Atlantic Monthly* 1000-dollar-prize article, "when its owners permit it to become free." It is, certainly, not simple to permit freedom of writing to the editors if the owner of the paper has enslaved himself to an advertisement plant whose business it is to sell headlines on crimes, elopements, and divorces, instead of selling articles and news on how to promote human happiness and improve communal association. Indeed, the Berlinians did not know how privileged they were when they wrote an article for their favorite newspaper, saw it printed on the front page as an editorial, and cashed in on it for an honorarium of 100 or 200 marks. No, that never happened in Boston! There the newspapers—as the railroads—"are not for the benefit of the dear public. That cry is all nonsense!"—says rugged

[6] These dollar figures are fictitious and refer rather to Metro-Boston conditions than to those of Metro-Berlin. The Greater-Berlin communities never levied such high real estate taxes.

individualism. Ergo: Boston could not have those expert Berlin writers who knew how to enlighten their readers in matters of art and building and planning and politics, and who were allowed to attack and to defend anything that hampered or furthered progress in civilization and culture.

And as to the second means of persuasion, the exhibit of ideas and plans of how to shape a metropolis in a genuine spirit of association, the Berlinians needed only to call on their public-minded experts and let them show how to do it. And that they did as early as 1907 when the professional organizations of Berlin's architects and engineers took the lead in promoting a large-scale competition for a master plan of Greater Berlin. Inspired by the planning work that two outstanding American builders, Daniel H. Burnham and Edward H. Bennett, had accomplished ten years earlier for the city of Chicago, the Berlin planners approached the city of Berlin and its surrounding counties to spend 100,000 marks for drawing up some sketches of a master plan for Greater Berlin. That much money they got with the support of the press and with the help of far-sighted mayors and politicians. The result of the teamwork of Berlin's planners, engineers, and economists was then dramatized in Berlin's international city planning exhibition of 1910 and, in July 1911, was crowned by the law-makers of the Prussian State with the enactment of the charter of the "Verband Gross Berlin," the County Council of Greater Berlin. This achievement of spirited citizens must be valued in the light of a temporal and monetary comparison: When the Commercial Club of Chicago entrusted Burnham and Bennett at the turn of the 19th century with 80,000 dollars for making a master plan sketch of that city, and when the communities of Greater Berlin spent 100,000 marks in 1908 for the first sketch of a master plan of Metro-Berlin, what did Metro-Boston do? Four decades later—mark!—it was quite content with the role of an *onlooker* when the Boston Elevated Railroad Company spent, anonymously, 10,000 dollars for a "Boston Contest," dealing only with sketchy ideas for a master plan for Metro-Boston.

V. Practical Idealism Versus Political Opportunism

Do we now enter a period when experts in political opportunism can advance their work only if experts in practical idealism come to their rescue? If so, it might be interesting to compare what planning experts of 1910 deemed necessary to remedy an untenable municipal setup in Berlin and what the first prize winners in the "Boston Contest" proposed in 1944, i.e., more than a generation later, for curing the Metro-Boston evils.

The Berlin experts in 1910 had already proposed a new unified municipal body for Greater Berlin, but what they could get out of a then still reactionary Prussian parliament was just a sort of municipal super-structure over 8 otherwise independent cities, 59 towns, and 27 villages. The Boston experts of 1944 agreed that the ideal solution for Metro-Boston "might be to organize one greater city, comprising the residences of most of the people who work in Boston, with one central authority, tax rate, and service system." Unfortunately, they said, "such a plan could not hope to achieve the massive public support which would be required, largely because the particular interests affected would organize a powerful opposition." Since non-combatants fear nothing more than opposition, they proposed, therefore, the partial emasculation of Metro-Boston's 83 cities and

towns by taking away from their authority and jurisdiction certain matters of planning, transportation, recreation, policing, welfare, etc. One might as well cut a body's heart, liver, and kidney into two pieces and expect it to live and grow. The surgeons of Metro-Berlin knew that such a "fifty-fifty" cut, as imposed upon the communities by the Prussian parliament in 1911, would not work; and, if the First World War had not deferred every legislation on municipal affairs, Metro-Berlin would have gotten its unifying charter prior to 1920.

Since the author earned his planning spurs in the late Berlin County Council, the "Zweckverband von Gross-Berlin," he might be entitled to tell the reader why such a super-structural setup as that proposed by the Boston Contest prize winners could not work and did not work. It is quite apparent that every community whose financial freedom to levy taxes and to render services is only partly restricted will oppose every action instigated by a super-imposed body with which it has to split such taxes and services; and it is also apparent that every such community will do everything in its power to get out of any common tax-pool more money than it has put in it. In following this policy of collective individualism it will use every political means—from open sabotage down to conspiratorial plots—in order to get what it wants. Thus planned actions on the part of any super-imposed "Metropolitan Authority," dependent on "communities as electoral units," must by force become irrecognizable caricatures of what planners envisaged when they proposed their new metropolitan organization.

But apart from these objective and financial consequences, only the uninitiated could be of the opinion that a "Metropolitan Authority," as proposed in the Boston Contest of 1944, would entail substantially improved services "without any corresponding increase in cost." What really happened in Berlin, and what would happen in Boston, is that every city and town used its freedom to plan and to act by submitting to the central authority and its money pool so many counter plans and counter proposals that their departmental cost increased. Still more deplorable than this cost increase was the confusion created by such "planned" actions among the seven dozen council bodies and the minds of the public at large.

It is true, the acid-test of a super-imposed metropolitan authority in matters of housing, welfare, health, and other very critical policies could not be made in Berlin because its short-lived County Council was authorized only to bring some sort of order into an intolerable variety of building codes, zoning ordinances, development plans, recreation facilities, and local traffic services. The success it had in this restricted field of action was, however, not attributable to its administrative setup, but mainly to the dexterous exploitation of First World War conditions by its general manager, an experienced administrator and financier. Although he happened to be a conservative of the first rank, he nevertheless went the whole way with the author in zoning down square miles of over-zoned suburban building land; he approved many radical building code revisions; he bought from the Prussian State some 25,000 acres of forests to be set aside as permanently secured recreation areas for the people; and he laid the foundation for the acquisition of all commuter traffic facilities.

One needs only to envisage vaguely planning projects like these to convince oneself of the insufficiency of a metropolitan authority like that which died on Berlin's soil in 1920. The sleep of death

surrounding the proposals of the Boston Contest prize winners reminds us again of Burnham's great prophecy: "Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency." But big plans cannot be made with small means, and surely cannot be made with and for the small interests that an individualistic minded time devotes to public affairs. And above all: big plans ask for bold executive authorities to push and drag them into realization. It was just the lack of such bold agents—and not the lack of able planners—that let American city-development slip 25 years behind that of Germany, England, Sweden, and Switzerland. One has to keep this fact in mind to understand why planning makes such slow progress in this country; and one has to re-orient his tactics and strategy in order to take the barriers that lopsided individualism has put up against communal actions. Political opportunism—a Latin word for three farthings, as Shakespeare would say—will not do the job that lies ahead of us.

VI. Planning Authority and Planning Tools

Planning Authority. The new municipal authority of Metro-Berlin, although legally established in April 1920, did not start working until its two central bodies and its twenty sub-community bodies were duly elected and Germany had passed through the disastrous inflation period of 1923.

The two central bodies were (1) the "Magistrate," i.e., the administrative and executive body, consisting of one first mayor, two second mayors, 9 salaried commissioners, and 6 honorary deputies of the City Council, all of them elected by the City Council for 12 years (but eligible for re-election!) except the honorary members whose office period expired after 6 years, and (2) the "Stadtverordneten-Versammlung," i.e., the City Council, consisting of 225 members, elected by the people for a period of 4 years.

The 20 sub-communities, whose population ranged from 60,000 to 362,000 souls (with an average of 215,000) had their own self-government in form of (a) a "Bezirksamt," i.e., a Sub-Magistrat, consisting of a varying number of salaried sub-mayors and sub-commissioners, supplemented by honorary acting citizens, and (b) a Sub-Community Council, whose members ranged from 17 to 66 representatives of the people (with an average of 50 for each sub-community).

Since the representatives of the central City Council had to be representatives of one of the 20 sub-communities, and since the Magistrat had to submit to the "Sub-Mayor-Assembly" all statutory matters of primary importance for advice or for approval, a close connection between the central and the sub-community bodies was vouchsafed. Moreover, every one of the 20 sub-communities administered its own budget once it was approved by the two central bodies of Metro-Berlin.

From this sketchy outline of Metro-Berlin's municipal setup it can be concluded that the main policy-making powers were vested in the central Magistrat on the one side, and in the central City Council on the other, whose deputies formed a special "deputation," under the chairmanship of a mayor or commissioner, for every major branch of administration. Projects, contracts, ordinances, etc., prepared by the various offices had first to pass through these deputations before the Magistrat accepted (or rejected)

them in its weekly meetings and sent them to the City Council if its approval had to be obtained.

He who has ever worked in such a democratically organized metropolitan government will confirm that it is the only way to make planning effective by the people and for the people. He, certainly, would not like to lose the initiative in planning coming from all subcommunities, and he would not like to miss the close integration of all these plans with the various needs and tasks that more than twelve departments on the central level have. Up to 1933 it was the declared policy of the central bodies of Metro-Berlin to keep the staffs of the central departments as small and as efficient as they possibly could be. Among the six other departments, put under the chairmanship of the building commissioner, the planning department with its 34 officials and its budget of only 258,000 Marks, was by far the smallest of all. And it could be so because its main task was to initiate or to steer planning ideas and planning policies to be carried out by the specialized departments of the central administration or the building departments of the 20 sub-communities. It would have been a waste of means and time—and beyond that a psychological blunder of the first rank—to deprive, for instance, the municipal traffic corporation or the municipal utility corporation or the municipal housing corporation of their rights and duties to plan. But it was a boon for all of them to have their planning work co-ordinated and timed and chaperoned through the policy- and budget-making authorities of Metro-Berlin: the Magistrat and the City Council. For such timing and steering work of the planning department nothing was more important than having the chairman of the whole building department sit in and defend the various planning projects in the various municipal deputations and corporations.

Planning Tools. It cannot be within the compass of this article to describe here in detail the many legal tools put at the disposal of the German planners. Overlooking their own kit of legal tools, the author would have to describe here more than 30 federal, state, and local laws. Therefore, he can mention only the most important ones, namely: the law of 1874 pertaining to the expropriation of private property, the law of 1875 pertaining to street and building lines, the law of 1902 on the redistribution (pooling) of property lots (the so-called "Lex Adikes"), and the settlement law of 1919.

Since German town development has in the past gone through so many stages of property restriction, it should not be surprising that the notion of how far "police power" in the interest of the common weal could go in overruling private interests was much more expandable in Germany than it is in this country. When Abraham Lincoln said to the American Workmen's Association in 1864, "Property is the fruit of labor," he did not go so far as the forgers of the German Constitution went when they codified in 1919 what some hundred years of property usage had already established as a legal principle: "Property is bound to obligations. Its use shall be in concord with the common weal."

Since American villagers never owned arable land in common, and may only dimly remember having shared some pasture land in the "Common;" and since our townsmen never had to build and to maintain huge fortifications, communal warehouses, guild-halls, and so on, it is quite natural that they developed a much stronger sense for private than for common properties. Most of their eastern governors were feudal landlords who

amassed their riches as "land plotters" and who saw to it that communal voting rights were based strictly on taxable land proprietorship.[7] To withdraw land from private ownership was—and is still today—in their eyes tantamount to killing the goose that lays the golden eggs. It is not so simple to convince an American city-father of the fact that urban land has no tax-fertility at all, and that income-producing buildings can be taxed as well if erected on publicly-owned land. But yet they cling to the man-made notion that buildings are "fixed" to land and that land, therefore, is the very basis of private property.

This notion of the "intrinsic" features of land governed German city-development in the 19th century as ruthlessly as it ruled over American cities. The difference was only that German law-makers of the 19th century never went so far as to suppress entirely the notion that private property has public obligations. German law never abandoned the legal maxim that "considerable advantages" of common interests rank above the interests of private proprietorship.[8] And thus it was not so difficult for the planners of the 20th century to prove that more than 100 years of ruthless urban ground speculation had done more than considerable damage to the common interests and had deprived the people as individuals as well as gregarious associations of much of that indoor and outdoor living space that they were entitled to possess. So it happened that far-sighted German mayors inaugurated a new era of communal land and building policy with a view to improving housing and recreation of the people.

The first German city to strike a heavy blow against ground and building speculation was the city of Ulm in Wurtemberg, which ventured under its Mayor Wagner as early as 1888 into the real estate field in the interests of the lower-income classes. By 1902 Mayor Adikes, of Frankfurt am Main, succeeded in getting from the Prussian Parliament for his city the first land-pooling law which enabled him to force land owners to put their various property lots into a pool from which it could be redistributed among the owners in such a way as to fit a preconceived development plan for which every lot owner contributed—without compensation—up to 40% of the pooled area for public use. In one form or another, the policy of land-taking by pooling, by eminent domain, by contract, or by free purchase, became after 1900 a constituent part of most of the German municipalities. To mention only one example: Metro-Berlin owned by 1929 about 148,000 acres of land (excluding streets, lakes, etc!) of which 48% was located outside its boundary lines while the rest constituted about 35% of its 220,000 acres of jurisdiction.[9]

Metro-Berlin's land supply policy, involving land and building assets of 933 million Marks (1929 value!), had of course no end in itself but served the following four main purposes: (1) to provide the urban troglodytes with adequate playgrounds, recreation areas, community buildings, etc.; (2) to counteract the flight of farm activities from suburban fringe land and to provide the city with a "space of nourishment," how-

[7] So it happened that our cities and towns still derive the bulk of their revenues from real estate properties. The city of Boston, for instance, derived in 1943 70% of its total revenues from property taxes, while Metro-Berlin in 1930 derived from the same source only 46% of the total revenues.

[8] What happened in this country between 1850 and 1870 would have been impossible in Germany, namely: to give to private railroad corporations public-owned land to an amount of some 235,000 square miles, or about 4 times the whole New England area.

[9] For comparison: The city of Vienna owned in 1930 inside and outside its boundary lines about 106% of its area of jurisdiction, and the city of Stockholm owned in 1935 about 73%.

ever small; (3) to secure an adequate groundwater supply for the city and to reserve land enough for its sewage water irrigation system; and (4) to control private land speculation all over the metropolitan area.

The land policy pursued in these four branches of municipal land supply cannot be described here in every detail, and for this reason the author feels that he ought to caution over-enthusiastic champions of public land ownership against any precipitated actions of municipal new-comers into such a widely ramified real estate business. It takes decades of accumulated experiences and well-versed and incorruptible expert commissioners to administer such varied land uses with financial success for the municipal budget.

The fact alone that Metro-Berlin administered in its "Berlin-Farm-Corporation" 66,000 acres of farm land shows that its "space of nourishment" policy was not a small-scale business. And it was a very intricate business, too. It was a business connected with all sorts of social (truck-gardening!) and scientific experiments, undertaken to accomplish with commonly-owned land what private land owners could never have achieved, namely: to transform poor land into soil of utmost fertility. Metro-Berlin approached this goal by putting at the disposal of the "Berlin-Farm-Corporation" its urban waste wherever and whenever it could be utilized to double and to triple the farm crops. For this purpose sewage water was channeled over irrigation fields where and when sandy soil needed both water and fertilizer. To transform poor land into highly fertile farm land by the method of sanitary garbage fill, or to utilize the unused night capacity of the municipally-owned electrical plants for lighting and heating greenhouses was another experiment that could have been made only by an authority capable of integrating and synchronizing its various departmental activities according to plans based on agricultural and technical laboratory work.

Among the various purposes of Metro-Berlin's municipal land supply policy, the fourth, as mentioned above, was certainly not the least important tool with which to shape sound city development or city redevelopment. One can imagine what it means if a city controls, through owning a large stock of building land scattered over fringe as well as over center districts, the sale prices of privately-owned land. Every real estate man knows today that city-center land prices are very much influenced by city fringe land prices, and vice versa; and he knows also that he who can throw on the market large enough land tracts for expanding center business or for large settlements on the fringe of the metropolitan area will always be the victor in the battle for suitable places under the sun. And if one adds to this superior strategical position the tactical fact that he who plans, owns, and operates the mechanical arteries of a modern city—the traffic facilities and public utilities—can willfully determine where to lead the sole land value creating power: the purchasing power of the people. Then one has the main tools a planner and builder needs for an orderly and economical development of urban areas.

And these tools stood almost unrestricted at the disposal of Metro-Berlin's municipal authorities. It is for this reason that Berlin was one of the first cities in Germany and Europe to encourage large-scale housing developments of whole neighborhood units on public land. Disposing of vast areas of suitable building land, and being the trustee for some 120 million marks of housing tax money, annually to be invested in junior mortgages at an interest rate of 1%, the

Berlin Housing Corporation could every year steer some 20,000 (1927) to 44,000 (1930) new dwelling units into those communities where they were most needed and where existing community facilities could be utilized to full capacity. Thus economic planning and building, with a view toward the common weal, was attained by a kit of planning tools which, for a long time to come, will be envied by every American planner.

VII. American Versus German Planning Prospects

"The basic achievement of planning is to make potentialities visible," said Benton MacKaye. Nowhere has planning in the United States made potentialities more visible than in the achievements of the Tennessee Valley Authority, created by an act of Congress in May 1933; and nowhere has planning in Germany attained a greater effect than in the achievements of its Ruhr Valley Authority, called "Siedlungsverband Ruhrkohlenbezirk," created by an act of the Prussian parliament in May 1920. Strange, both examples of large-scale planning originated in actions made in 1899. In the United States it was the authorization by Congress to build a dam at the Muscle Shoals for a private power development; and in Germany it was the creation of the Ruhr Dam Association ("Ruhrtalsperrenverein") sponsored by counties and cities of the Ruhr region. In spite of their common birth date, their childhood development was very different. The T.V.A. had, and still has, to fight for its existence and its growth against powerful private interests; the R.V.A., however, was always strongly backed up by both the state and municipal authorities on the one side and the biggest industrial enterprises and labor unions on the other. This contrast in large-scale planning support shows better than anything else which of the two countries has made the greater headway in planning achievements. No doubt, this country cannot escape repeating Tennessee Valley and Boulder Canyon projects; just as Germany could not escape organizing new regional planning authorities in Saxony and Thuringia; but now there is a great difference between both countries; Germany—and with it Europe—is beaten and impoverished and, therefore, it will *have* to plan its cities and regions as it never dreamt of doing before. And America? America has come out of the Second World War as the undisputed victor—and victors are seldom inclined to admit that their power needs constant support and the stringent utilization of additional power sources.

It is doubtful whether the United States will make as much use of its most accessible power resources as Germany will, namely: of the power resources available for every nation that has built up its machine civilization on the laisser-aller principle of the 19th century, that Carlyle once rightly characterized as an "anarchy plus a constable," and that left on its way to individual power and individual riches the greatest waste in what the author would like to call the "public sphere of life" or the "public realm of economy." In the private realm of economy, free competition impelled by the profit motive power, could do all it liked to lower the operating cost and to increase the proceeds. But this private endeavor found its legal and actual limit where office doors and factory gates led into the realm of public economy. Business planning in this realm was and is and always will be the prerogative of public bodies or of private associations of corporate character or a mixture of both of them.

When the machine age began to stretch out its transportation tentacles into the realm of public economy, the free play of power saw itself put to the dilemma of either yielding to the "constable" or taking planning in this realm into its own hands. In Germany the planning functions in the public sphere of life fell, due to the tradition and due to the inherited policy of "state-mercantilism," into the hands of the constable, i.e., the political bodies of the state, the provinces, and the communities, rather than into the grip of private corporations, as was the case in this country with its transportation facilities and public utilities. The question is now, who made a better use of the most powerful determinants for planning a nation's, a region's and a community's public sphere of economy?

A steep ascending curve in the development of all means of transportation was always considered by the "free play of power" economy as the best indicator for flourishing business and rising wealth —and rightly so! The more full-blooded and ramified an economy becomes the more must its traffic artery system branch out. But no economist can overlook the fact that all means of transportation constitute charge expenses and that these charge expenses can assume a quota indicating that transportation has become an income-consuming instead of an income-creating factor. Such an income-consuming traffic development has nowhere else come so rapidly to the surface as in our country in the last 30 years. By 1935[10] the private and public means of transportation of this country had already absorbed about 8.6 horsepower per capita, while the income-producing industrial and agricultural plants operated on only about 1.1 hp. per capita. Confronting these figures with the comparable (1925) figures of Germany, which rose only to 0.6 hp. and 0.3 hp. respectively, we may pay due respect to our higher living standard, and yet come to the conclusion that an eight-times larger army of mechanical slaves working for the shifting of the people "from places where they would rather not live to places where they would rather not work" is nothing but wasted wealth and misused slave labor.

An impoverished Europe will look at such an anarchic economy with an ungrudging smile, and will rather stick to the old-fashioned but much more economical mercantile principle of transportation that taught them to carry goods to men rather than men to goods, and that excluded duplication of transportation as much as it abhorred the transport of excessive materials. Following this principle of "goods-to-men" transportation, Europe will have to rebuild its 19th century cities—whether bombed out or not —and will have to replace them with well-planned communities which radically eliminate waste of machine-power, waste of man-power, and waste of material. Europe of today cannot afford *not* to plan, and not to plan three times more economically, more humanly, and more artistically than private enterprise ever did in this country. It simply cannot afford to tear dwelling places from their working places and let public authorities care for the additional charge expenses entailed by such a decomposition of economic and social units as families, neighborhoods, townships, metroships, and regions. It cannot afford to let communities grow or die at the command of investment bankers who skim off the savings of villages and other prime income-producing smaller communities in favor of mammoth urban agglomerations whose "profitableness" appears only in their bank books as credits but whose

[10] Newer figures, not available, would show a still more unfavorable picture!

debits ruin the finances of all those public authorities which have to provide the subsidies for farm products, for housing, for education, for sanitation, and for all sorts of transportation and city rehabilitation.

We need only to think of the task now lying ahead of all of our cities that grew during the past 100 years of our machine-age like mushrooms after a summer night's rain. Their buildings, their roads, their bridges, and all their utilities above and below the ground, all of them built *by* but not *for* the machine-age, become from year to year a steadily growing liability for the "dear public." Europe would be more than foolish *not* to abandon an urban pattern of civilization whose building forms and building methods were determined by the apprentice, rather than by the master-knowledge of our age of technology. Indeed, it would be foolish to put into the construction of dwelling room some fifteen or twenty tons of building material where three tons of the most modern kind would produce a three-times more efficient shelter for genuine family life; and it would be foolish to over-supply and over-dimension all sorts of costly office- shopping- and factory-space for "expectancy" speculations of private investors if a planned economy could use that wasted money and material for the expansion of genuine community life. Yes, in Europe there will be new towns and new regions and new countries in the making; all of them owing their existence not to abundance but to want, and not to the spirit of individualism but to that of association. Europe, no doubt, has by tradition and dire need a planning headway which our country can approach only if it reminds itself that Goliath can be more vulnerable than David. Only boldness in planning can prevent our generation from having a fateful rendezvous with destiny.

Coke—A Key Industrial Material

By WALTER H. VOSKUIL*

THE primary function of coke is to reduce ores to the metallic state. Whatever other uses may have been found for coke or to whatever other uses it has been put they are but incidental in the economic significance of this material. The reduction of iron ore in the blast furnace using coke as a fuel is so far superior in terms of economy than any other method of ore reduction that there are no rivals. This is of fundamental significance for it is at present the only means which we know of for obtaining iron cheaply.

The other uses of coke, such as house heating and gas making, are incidental contributions and refinements in a technology which became possible only after low-cost smelting of iron ores was accomplished.

Coke is an artificially prepared fuel, the residue that remains after certain bituminous coals have been subjected to destructive distillation. Due to its porous structure, hardness, strength, and size, it has become the chief metallurgical fuel.

The evolution of the coke manufacturing process, first in the beehive oven and more lately in the modern by-product oven, stands as one of the significant developments in the transformation of industrial society from the handicraft and semi-handicraft stage to a power-operated economy. For, in addition to its unique characteristics as a fuel for the reduction of iron ore, coke supply freed the metallurgical industry from the sharp limitations of fuels hitherto available for smelting ores—charcoal and anthracite.

With the advent of the coke oven and the blast furnace, the requisites for industrialization — cheap steel — emerged into a reality. These two instruments of production, the coke oven as the producer, in mass tonnages, of a requisite fuel, and the blast furnace, the highly efficient producer of pig iron in mass tonnages, are the gateways to a highly productive, versatile, complex industrial economy. Other methods of obtaining raw iron and steel have been proposed but, to date, none show any possibility of replacing the blast furnace with heat supplied by coke.

The coke oven, then, together with the blast furnace, becomes the symbol of productiveness, the basis of a high standard of living, of power.

Metallurgical Coke, Other Coke, and By-Products

In its function as a metallurgical fuel, coke is a key material in the industrial process. The development of this fuel and its primary purpose is the need of a satisfactory smelting fuel. Today, its usefulness goes far beyond the need for smelting. Coke is used as a domestic fuel, in nitrogen fixation, gas manufacture, and as a smokeless fuel in certain industries. The by-products, recovered from the destructive distillation of coal, supply ammonium fertilizers, gas, a multitude of tar products and light oils suitable for motor fuel and for chemical raw materials.

These other uses, while performing no fundamental role in the functioning of our industrial economy, do nevertheless, increase substantially the aggregate value of the products of the coking process and, in this respect, tend to decrease somewhat the cost of metallurgical coke. The value of these by-

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product industries is brought out by a consolidated balance sheet of costs and realizations of the beehive and by-product processes.

BALANCE SHEET FOR PREWAR YEAR, 1939
(*Thousands of dollars*)

	By-product Ovens	Beehive Ovens
Value of coal charged	$ 229,786	$ 4,584
Value of coke	206,457	6,426
Value of all products coke, breeze, and by-products	348,625	6,488

The Evolution of Coke Manufacture

The Beehive Oven Era. The quest for a suitable fuel for smelting iron ore in the blast furnace led first to the beehive oven. This type of oven was singularly well adapted to the early era of the iron and steel industry. Coke was needed primarily for iron ore smelting. There was no demand for other uses or customers. The art of by-product recovery was then unknown and it is doubtful if a profitable market for by-products could have been readily developed. The elaborate industrial economy with its intricate interrelationships among industries, the use of by- or waste-products of one as the raw material for another was, at best, but feebly developed. The iron industry needed a hard, porous, quick-burning fuel for smelting, and it obtained this fuel by distilling off the volatile contents of a suitable coal. In an economy just emerging from a dominantly agricultural state into an incipient industrialism, the beehive oven was the only practical instrument for the manufacture of a metallurgical fuel for the expanding pig iron industry. In spite of its wastefulness of the volatile ingredients of coal, the beehive oven, nevertheless, fitted the economy of its day. Capital requirements were small by comparison to the modern oven. The ovens were located near the source of coal which, in the early days of the iron industry, were in the Pittsburgh district, and this effected economies in assembly of materials. Today the beehive oven is relegated to a minor role in the coke manufacturing industry. It still plays a useful role as a means of quickly expanding coke production in small increments where rapid expansion of coke was essential, or to reduce output, at a small expense of plant write-off in a period of declining coke demand.

The first beehive oven appears to have been put into operation in 1841 and the first successful use of coke as a blast-furnace fuel was thoroughly demonstrated in 1859 in Pittsburgh. From that time the output of coke increased rapidly.

The By-product Era. The first battery of Semet-Solvay by-product coke ovens was built at Syracuse, New York, in 1893. The output of by-product coke that year was 12,850 tons and represented 0.1 per cent of the year's output. From that date there was a steady and noteworthy increase in construction of by-product ovens. By 1919 the output of by-product coke exceeded that of the beehive oven and by 1937 the latter was reduced to a contribution of six per cent of the total output. Only the exigencies of a world at war and the immediate need of a rapid increase in coke output brought about an upturn in beehive coke manufacture during the war years. The displacement of the beehive oven in favor of the by-product oven was inevitable.

The advantage which the by-product oven has over the beehive lies in a number of factors:

1. The by-product coke plant can be constructed at or near the blast furnaces

which are to consume its coke, and thus be under the same management.

2. It is practicable to ship to it coking coals from any section within a radius of a favorable freight rate.

3. Many coals not suitable for coking in beehive ovens become available for by-product ovens by mixing with other coals and are so used to make a first-class blast furnace coke.

4. Coking coals in by-product ovens permit of the full recovery and use of the very valuable by-products and the gas.

5. The cost of making by-product coke at the iron and steel works is considerably less than the cost of making beehive coke at the coal mines and transporting the coke to blast furnaces, especially when located some distance away from the beehive districts.

The Economic Function of By-Products

The recovery and sale of by-products increases substantially the realization from coke oven operations. In the year 1944, for example, the balance sheet was as follows:

Cost of coal at the plant	$480,197,510
Value of coke produced	478,844,172
Value of by-products sold	210,065,863
Value of coke produced and by-products sold	686,910,035

Besides coke, the primary by-products of the coking process are gas, tar, ammonia, and light oil. It is evident from the most cursory consideration of the by-products business that the coke industry sells to its immediate users almost nothing but fuels. Coke goes to the blast furnace or foundry; gas is sold to industrial plants or to householders for heating and cooking; tar is often sold for use as fuel. But when these or other products of coal carbonization are used for purposes other than fuel they usually become raw materials for manufacture of other products, which in turn are sold once or many times before reaching the ultimate user. The production of one coal product is invariably accompanied by all the others. Under these circumstances the importance of properly balanced demands for coke, gas, tar, and other products is a matter of concern to the plant operator.

For the past three decades approximately 80 per cent of the by-product coke manufactured in the United States has been used as blast-furnace fuel. This is an important factor in the organization of the coke industry and in the nature of the by-products market. The blast furnace operator must be assured of a dependable supply of coke and for these reasons alone a steel company is likely to prefer to own and operate its own coke plant. Furthermore, the cost of coke is one of the largest single factors in the cost of pig iron. Hence, maximum economy in manufacturing coke is essential. In an integrated steel plant comprised of coke ovens, blast furnaces and steel hearths, substantial economies can be effected by an interchange of by-products from one of the units of the integrated plant for use in the process in another of the units. For example, by-product gas from the coke oven can be used to heat the stoves and to fuel the compressor engines of the blast furnace or to supply fuel for the open hearth steel furnace. Also, the molten pig iron may be transferred to the steel plant from the blast furnace for conversion into steel without solidifying, thereby effecting economy in heat requirements.

Since it is an exceedingly costly undertaking to begin or cease operations of a by-product oven, the manufacture of coke is somewhat inflexible and, at every depression in the steel industry, some of the metallurgical companies owning coke works are likely to become sellers of coke. Often the result is to

break the spot market price for coke and cause the contract market to sag, to the disadvantage of the operator of a merchant coke plant.

The Kinds and Diverse Sources of Coke. The term "coke" is used in connection with a number of fuels manufactured by various methods and for different purposes. These fuels have one characteristic in common—low volatility. In the fuel industry, these are recognized: Beehive and by-product coke; gas house coke; petroleum coke; low-temperature coke; and special and semi-coke.

The uses of these several types of coke falls into two classes insofar as their function in industry is concerned —metallurgical and "all other" uses.

Of the types of coke listed above, beehive and by-product coke is manufactured primarily for use as a metallurgical fuel, but it has also found a considerable market as a domestic fuel and performs a very important service in industry as a fuel and raw material for the manufacture of fixed nitrogen. There are other miscellaneous uses.

Gas house coke is the by-product of an industry, the primary objective of which is the manufacture of gas. The coke is merely a product to be offered in a competitive domestic fuel market. This is also true, largely, of petroleum coke, although this material, by reason of its negligible ash content, is useful for the manufacture of electrodes and some of it is used as such.

Low-temperature coke and semi-coke are products which represent attempts to improve upon bituminous coal as a domestic fuel or to produce a smokeless fuel. Because a process of this kind adds to the cost of the fuel and is accompanied by certain undesirable characteristics, such as an increase in the percentage of ash content, the result in terms of total demand for domestic fuels is as yet rather inconsequential.

The Source of Coking Coal. Coals suitable for the manufacture of metallurgical coke are restricted in geographical distribution and possibly limited in quantity. Hitherto the principal sources of coking coal have been Pennsylvania, West Virginia, Alabama, and eastern Kentucky. Minor quantities have been contributed by other states east of the Mississippi River. Illinois shows promise of increasing its hitherto small contribution to the total supply. Colorado, New Mexico, and Utah supplied coking coal to the local iron industry in Colorado. These are currently the states from which coking coal is obtained. Technological advances may widen the range of coals that may be converted into metallurgical coke. This happened in the change from beehive to by-product coke manufacture. Researches in coke production give evidence of such extension of coals suitable for coking.[1] Also, coking coals no doubt exist in the vast reserve of coal west of the Mississippi River, where demand, except locally, is non-existent.

The Relation of Coking Coal and Steel Manufacture. Since the steel industry is the most important user of coke, the geographical pattern of coke manufacture and coking coal movements are largely determined by steel plant location. Five steel districts dominate the picture and the relation of the coke industry to these centers will be considered. In 1945 these steel centers consumed coking coal in the order indicated in Table I.

The Coking Coal Movement. In analyzing the distribution of coke into the markets, we are concerned with two sets of shipments, i. e., (1) the movement of coking coal to the ovens for process-

[1] Illinois Geological Survey studies.

TABLE I. BY-PRODUCT COKE PRODUCED IN THE UNITED STATES IN 1944 AND 1945, BY GEOGRAPHICAL DISTRICTS, IN THE IRON AND STEEL INDUSTRY

DISTRICT	Coal Charged (000 net tons)		Coke Produced (000 net tons)		Per Ton Value Coke at Ovens	
	1944	1945	1944	1945	1944	1945
Eastern	23,206	22,330	16,511	15,868	$8.12	$8.45
Pittsburgh-Youngstown	26,123	23,500	18,381	16,485	5.55	6.02
Cleveland-Detroit	9,921	9,293	7,189	6,681	7.75	8.32
Chicago	19,974	18,143	14,484	13,193	8.62	8.91
Southern	12,261	11,575	8,769	8,241	5.33	5.90
Western	2,954	2,696	1,730	1,626	8.94	9.32

ing, and (2) the distribution of coke from the ovens. The close association of by-product coke oven with the steel plant, and the location of important steel centers near markets rather than near ore bodies, Chicago, Sparrows Point, or Buffalo, as examples, makes the movement of coking coal, in some instances, necessarily long. This is particularly the case of coking coal consumed in the Chicago district. In considering in detail the nature and pattern of coking coal movements, we must take cognizance of three major sources of coal supply and five major coke manufacturing districts. The sources of supply are the northern Appalachians (Pennsylvania and northern West Virginia), the southern Appalachians (southern West Virginia, Virginia, and eastern Kentucky) and Alabama. The coke manufacturing districts are Eastern, Pittsburgh-Youngstown, Cleveland-Detroit, Chicago, and Southern.[2]

Possibly the ideal situation exists in Alabama where coking coal, iron ore, and fluxing stone are practically adjacent to one another and where assembly costs are lowest of all in the United States. Coke at the plant is valued at $5.33 (1944) which is the lowest of all the steel districts and to which costs in only one other district, Pittsburgh-Youngstown, are comparable.

Coal for the ovens in Pennsylvania, Ohio, and western New York is supplied, in the main, from Pennsylvania and northern West Virginia sources, although eastern Kentucky has, in recent years, become a substantial contributor.

The third major source of coking coal, the southern Appalachians, differs from the Pennsylvania and Alabama coal districts in having only a limited outlet near at hand. By far the major portion of this coal is shipped to distant markets, principally in Illinois, Indiana, Ohio, Maryland, Michigan, and Massachusetts. Two-thirds of the coking coal produced in West Virginia, Virginia, and eastern Kentucky is shipped to these six states. Indiana and Illinois obtain 96 per cent of their requirements from the southern Appalachian fields.

Interrelation of Coking Coal Markets and Domestic Fuel Markets in the Chicago district

The Chicago district is a large consumer of prepared sizes of coal imported from the Appalachian fields for use in domestic heating and in small commercial and industrial establishments. The southern Appalachian district supplied nearly 40 per cent of the coal sold to retail yards. This large shipment must be interpreted in connection with the

[2] The western producing and manufacturing district will be discussed separately.

predominant position of these districts in the by-product coal market of the steel centers of Illinois and Indiana. The prepared sizes of coal sold to the retail trade and the run-of-mine and screenings sold to the coking industry are joint products of the same operation. The production of one brings about the production of the other. Hence, it is advantageous to develop markets for the prepared sizes that are, in a sense, by-products of the coking coal output. These markets are found in the domestic fuel requirements of the Chicago district, in eastern Wisconsin, and in Minnesota. It should be noted that shipments over the lakes from southern Appalachian districts are mainly for industrial and by-product fuel and not for domestic fuel. Two factors enter into this distribution pattern. The rail-lake haul results in severe degradation, and loss of merchantable coal of domestic grade. This degradation is not of much significance in coal used for industrial purposes or in the by-product oven. The second factor forming all-rail haul for the domestic sizes of coal is the ultimate destination of fuel for domestic use. In the case of the Chicago market, the coal is destined, not on the lake front as in the group of heavy fuel-using industries in the southern part of the Chicago industrial district, but in the outlying residential districts, southwest, west, and northwest. A rail-lake haul would involve, after unloading at Chicago ports, an additional rail haul. There several transfers and separate coal hauls from mine to consumer's bin, together with the severe degradation entailed, would erase any possible economies achieved by water transportation on this particular grade of fuel. This, however, is not the case for markets as far north as eastern Wisconsin cities and the market supplied out of Duluth.

Distribution of Coke. The distribution of by-product coke is characterized by a restricted movement of coke for metallurgical use and a wide geographical distribution of coke used for other purposes. The bulk of by-product coke produced is used by producers in adjacent metallurgical works and in independent but geographically associated iron works. The remaining coke, about one-fourth of the total output, is widely distributed among several classes of customers and over a wide geographical area. The principal users are domestic consumption, foundry use, gas making, and other industrial use. The most important of these "other uses" is the domestic fuel market, followed by gas making and foundry use.

With the exception of the use of coke gas manufacture for producer which is limited to eleven states, the "other uses" occurs in practically every state in the Union. The result is that coke-producing districts may have a very restricted geographical market for metallurgical coke but a wide market for other uses. For example, the Alabama district ships metallurgical only within the borders of its own state whereas it ships foundry coke to twenty-nine states. The Illinois district also does not ship metallurgical coke beyond its own boundaries but ships foundry coke to nineteen states. On the other hand, Pennsylvania, leading state in coke production, sends metallurgical coke to no less than eight states and foundry coke to twenty states.

The Reserves of Coking Coal. The key position of metallurgical coke in our industrial economy prompts one to raise the question of the adequacy of coking coal. Not only is metallurgical coke the indispensable first step in freeing iron from its ore and reducing it to a useable material, it is also an im-

portant element in the cost of pig iron production.

The principal source of coking coal for both eastern and lake states blast furnace locations has been the thick, low-cost, easily minable seams of the Pittsburgh district and the low volatile coals of southern West Virginia and eastern Kentucky. That these choice coals are not inexhaustible is pointed out in a report by the National Resources Planning Board in their report entitled *Energy Resources and National Policy*.[8]

"Depletion is becoming evident in some comparatively large areas . . . The high quality smokeless coals of southern West Virginia in beds 3 feet or more thick will last only about 85 years at the 1929 rate of mining. The life of the great Pittsburgh bed in Pennsylvania is limited to 100 years at the 1929 rate of production, and the Connellsville coking coal in the Pittsburgh bed, which contributed heavily to the development of the iron and steel industry, probably will be sufficient for only 20 or 30 years."

Long before exhaustion occurs, the effect of depletion of the more favorably situated and better rank coals will become manifest. When the reserve supply begins to decline, it will do so at the most vulnerable points. The pattern of industrial location, having a direct dependence on low-cost coal, may have to be reshaped, as soon as the pinch of exhaustion, or even partial depletion, is felt. Extensive transportation of coal makes the delivered price of coal prohibitive for industrial purposes.

Since transportation costs on coal over a distance of a thousand miles or more would be so high as to make the delivered cost prohibitive, the solution of a possible decline in coking coal reserves in the Appalachian field does not lie in the development of coking coals in the western Mountain States. But, since the question of the adequacy of coking coal reserves in the Appalachian area has been raised by students of the industry, the issue must be examined in the light of available data.

One aspect of depletion of coking coal reserves is the quantity of coking coal mined and not used for the manufacture of metallurgical coke. A survey made by the Bureau of Mines of coking coal produced in 1940 discloses that counties producing coking coal shipped a total of 171,440,000 tons of coal of which 76,582,780 tons were made into coke, or about 45 per cent of this total, 158,091,000 was produced in the Appalachian coal-producing states of Pennsylvania, West Virginia, Virginia, and Kentucky, of which 69,060,000 was used in coke manufacture. Meanwhile, the total production of bituminous coal in the United States in 1940 was 460,771,500 tons. Of this, 171,440,000 tons, or 37 per cent, was suitable for coking but not all so used.

An examination of coal production by counties in Pennsylvania, West Virginia, and Alabama covering the period 1916 to 1944 shows a substantial decline in output in such important coal counties as Alleghany, Fayette, and Westmoreland in Pennsylvania, offset by an increase in practically all counties producing coking coal in West Virginia. Meanwhile output in Alabama remained relatively unchanged.

These brief and incomplete notes on the reserve picture of coking coal are merely intended to serve as a suggestion that, in view of the key role of coking coal in the continued functioning of an industrial economy, a detailed examination of the resources and the establishment of a tentative inventory would serve as a useful guide in directing research on coking coal problems and in the formulation of a fuel policy.

[8] *Report*, Energy Resources Committee to the National Resources Committee, 1939, p. 64.

Income Versus Property Taxation for State and Local Governments

By HAROLD M. GROVES*

STATE and local governments are at the fiscal crossroads. On their postwar route of expanding needs, they have four alternative directions in which to go.

The road to the North marked "General Property Tax" is a familiar highway. But it is not a popular choice for many reasons, most of them impregnably valid.

On the theoretical side, most taxes are tested in terms of their relation to the benefits received by the taxpayer or to his ability to pay. On neither count is there much to say for the general property tax. As to benefits, the point is often made that the fire and police departments of local governments involve property-service expenditures. Where would the property owner be without these services? Would he not try to provide them cooperatively were the government out of the picture? One answer is: Where would any local dweller be without these services? A general benefit justifies a tax but there is no clear apportionment of such benefit to indicate what kind of tax. Even if we were to concede that property alone is the beneficiary of these local services, the value of individual property would be an exceedingly rough index of benefits among property owners. A valuable fireproof building might depend less on the fire department than would a valueless "fire trap," and an idle lot might not receive as much protection from the police department as would a less valuable automobile.

The case for the property tax is at even a greater disadvantage in terms of ability to pay. It is a "debtors' tax," allowing the owner of real estate no offset for liabilities. Frequently, to avoid double taxation and difficult administration, it ignores the well-to-do creditor. Universally it ignores "wealth" which takes the form of personality (not to be confused with personalty); education, skill, talent, experience, and the like, may possess first-rate exchange value but they are immune to the property tax.

Then too, the property tax, though nominally proportional, is actually regressive on two counts. For a variety of reasons, assessors usually assess property of low value at a higher ratio (of assessed to true value) than they do property of high value. The most innocent of these reasons is that the high-valued property is less familiar to the assessor and that, when he must indulge in guessing, he does so conservatively. In the second place, the property tax is regressive because it is a levy on shelter for which the poor pay a greater percentage of their incomes than do the rich.

Speaking of shelter, one may recall that at the time of Adam Smith a prevailing practice was to tax individuals on the number of doors and windows in their houses. This was criticized as a penalty on desirable light and ventilation. Now we ignore these particular features of a house, but we do tax the whole house and with much the same effect. At a time when inadequate housing is the topic of the hour and when subsidies for low-cost housing are extensive in practice and legion in proposal, a local tax system that penalizes housing is, to say the least, suspect.

Of course, few sensible people have

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any illusions that property taxation could be abandoned entirely. There are many, however, who feel that the property tax is already overworked and they are especially skeptical about expanding it further.

Let us, then, inspect the other roads extending from our intersection. The one to the South is labeled "Sales Tax." Its reputation is even worse than that of the North-bound highway.

Some people contend that a tax on the "breakfast table" is no more regressive than one on shelter. But they are almost surely wrong. It may be that miscellaneous commodities (taxed by the sales tax) have the same relative importance as does shelter in the budget of rich and poor. However, the property tax often falls on landlords and, according to the standard theory of incidence, is passed along to tenants only partially. Particularly that part of the property tax based on land values is often capitalized and, by reducing the value of land, constitutes a burden on past and present landowners rather than on land-users.

It would seem that if the reformers of local taxation offer only the substitution of one regressive tax for another, we had better let sleeping dogs lie. Or we might conclude with the classic remark of Professor Seligman that "the sales tax constitutes the last resort of countries which find themselves in such fiscal difficulties that they must subordinate all other principles of taxation to that of adequacy."[1] This conclusion still commands the loyal support of most students of taxation despite the fact that a general sales tax was inaugurated by a labor government in Australia and by liberal Mayor LaGuardia in New York City.

Let us then look to the West. Here we find a road marked "State and Federal Aid." If the municipalities must spend more money, let them ask the central governments for funds. These central units can raise the wherewithal for aid programs from defensible taxes such as the income and estate taxes—at least the federal government can.

However, this road is not all downhill and smooth pavement either. That the aids are a useful device, especially for ensuring a minimum of public services in underprivileged areas, might be generally conceded. When they go further, involving the collection of revenue in wealthy urban centers and the circuitous routing of this revenue to the treasury of some central government and back again, they are not so readily acceptable. The circuitous routing means a loss of proprietary interest in the funds and a sacrifice of local independence. Would it not be better were New York City to rely on its own resources instead of sending a lobbyist hat in hand to Washington, particularly with Washington itself collecting so heavily from New York City?

As to the matter of independence, one recalls the prophetic comment of President Jackson that "money is power, and in that Government which pays all the public officers of the States will all political power be substantially concentrated."[2]

It may be that the road most municipalities are seeking is one offering a new *independent* source of revenue. If so, the advice to take the road West will have a most unsavory flavor. Again, this looks like only a last-resort alternative.

There is still the road East bearing the sign "Income Tax." Over half the states have accepted this outlet for part, though

[1] E. R. A. Seligman, *Studies in Public Finance*, New York: Macmillan Co., 1925, p. 131.

[2] *Messages and Papers of the Presidents, 1789-1902*, edited by James E. Richardson, Washington, D. C., 1933, III, 67.

usually a minor part, of their traffic. Recently even a few municipalities, notably Philadelphia, Toledo, and St. Louis, have ventured on this broad highway.[3] They have launched forth, however, over the protest of many tax critics who believe this road should be closed to all but the heavy trucks of the federal government.[4]

Several grounds are cited for barring state and local governments from the use of an independent income tax. One is that income is national in character and that it cannot be divided for purposes of taxation by states and subdivisions. Some income is earned in one state and received in another and some corporate income is earned by business which crosses many state boundary lines. The states have employed a variety and diversity of bases and formulas in the allocation of income with the result that some income is taxed twice or more and some escapes taxation entirely. Committees of the National Tax Association have repeatedly studied the diverse practices of the states and have recommended model procedures for the division of interstate income.[5] A few legislatures have taken action along the lines of these recommendations. Others have gone "their own sweet way," with no apparent awareness of any problem. The Supreme Court has mainly sidestepped the confusion. Deduction of state taxes against federal and retention of moderate rates by the states have prevented the problem from growing unbearable. There is little evidence as to the amount of injustice and frustration involved. Unquestionably, much could be done to alleviate the problem were the states awakened to its importance. However, students of interstate fiscal relations have properly recognized this weakness in state levies as a major limiting factor in the further exploitation of the income tax field by the states.

It is also argued, for barring states and municipalities from the income tax field, that the cost of multiple administration and compliance is, or might be, prohibitive. Such evidence as we have[6] of these costs does not indicate that they are in this range, though of course it would be desirable to eliminate waste wherever possible. This could be done with little or no sacrifice were we to develop a system of central administration and collection of local taxes. Local governments would use the same tax base as do the central governments and simply add on a rate at their own discretion (though perhaps within limits) which the central government would apply and collect for them.

Finally, it is alleged that the federal government is unable to exploit the income tax to the fullest extent while states and municipalities clutter up the field. This argument figured heavily in the decisions of Canada and Australia to nationalize their income taxes during World War II. To be sure, the deductibility of state and local taxes in calculating the federal tax takes some of the edge off this argument. But it is also alleged that only the federal government can apply progressive rates successfully because the smaller units are obliged to tax some incomes in part only. However, this can also be interpreted as good reason why the states, rather than abandon the income tax field, should confine

[3] Edward Roesken, "Municipal Income, Sales and Use Taxes," *Taxes*, Vol. 24, No. 10, October 1946, pp. 972-978.

[4] For instance, see James A. Maxwell, *The Fiscal Impact of Federalism in the United States* (Cambridge, Mass.: Harvard Economic Studies 79, 1946).

[5] *Proceedings of the National Tax Association* (1938), pp. 486-500; (1941), pp. 583-603.

[6] James W. Martin, "Costs of Tax Administration: Examples of Compliance Expenses," *Bulletin, National Tax Association*, Vol. XXIX, No. 7, Apr. 1944, pp. 194-205.

themselves to a broad-based tax with moderate progression. Cities might confine themselves to a strictly proportional tax. Of this, more later.

However, there is a big boulder on the income tax highway which state and local governments are obliged to confront and which the federal government happily can by-pass. This represents cyclical and other fluctuations in tax receipts that attend the imposition of an income tax. The latter is frequently described as a "fair weather" tax, and statistics indicate it to be the most "cycle-sensitive" of any major revenue source. In 16 of the 19 states that had income taxes during the period 1929-1940, annual yields of this tax fluctuated within the range of 2 to 1 and 8 to 1.[7] This instability is no worse than that of the federal tax, but the states are in a far less favorable position to take such revenue gyrations. A reduction of 50 per cent in the yield of an important state tax is a calamity. The federal government with its monetary powers and credit elasticity, might consider a fluctuation of this kind an advantage. The tendency of this federal tax to fluctuate in yield has been described as "built-in flexibility," and highly praised.

As for the states, the depression experience of Wisconsin is illuminating. Of course, the public payroll of the state refused to accommodate itself in any great degree to revenue fluctuations. Over a period of 12 years the state subsisted to the extent of about $30 million upon the diversion of tax receipts ostensibly collected for highway purposes.[8]

This took the form of a nominal delay in the authorization to spend these funds according to their intended purpose. No great harm resulted, to be sure, but those interested in highways resented the role in which they found themselves—that of insurers of the state's liquidity. In 1945, over the Governor's veto, the legislature insisted on the future "segregation" of highway funds.[9] Where the state will go for "insurance" in the future remains to be seen.

In Wisconsin, municipalities have participated in the income tax through "sharing"; that is, fifty per cent of the collections from the normal tax are returned to the cities, towns, or villages "of origin." Shared income taxes have been characterized by great diversity in their contributions to local budgets and by ranges in yield surpassing, in most cases, those of state income taxes. Table I below shows the average percentage of income taxes to total taxes and ranges in income tax yields from 1929 to 1944

TABLE I. AVERAGE PERCENT OF INCOME TO TOTAL TAXES AND RANGES IN INCOME TAX YIELDS 1929–1944, EIGHTEEN WISCONSIN CITIES*

City	Average Percent of Income Tax to Total Taxes	Ranges in Yield (ratio of highest yield to lowest)
Appleton	23.2	6.7:1
Beloit	28.5	20.5:1
Eau Claire	20.2	4.8:1
Fond du Lac	13.4	12.3:1
Green Lake	14.0	6.6:1
Janesville	42.7	29.8:1
Kenosha	20.6	12.0:1
La Crosse	20.7	7.6:1
Madison	14.3	6.1:1
Manitowoc	18.3	6.0:1
Milwaukee	17.0	7.7:1
Oshkosh	13.6	11.3:1
Racine	24.1	13.6:1
Sheboygan	10.0	7.7:1
Superior	7.2	7.1:1
Wausau	17.3	15.4:1
Wauwatosa	18.0	6.3:1
West Allis	21.2	77.2:1

* This tabulation was prepared by Ramona First.

[7] Data were assembled from census reports; *Tax Yields*, (Philadelphia, Penn.: Tax Institute, 1941); and *Tax Systems*, 6th to 9th editions, (Chicago: Commerce Clearing House).

[8] *The Wisconsin Taxpayer* (Madison: Wisconsin Taxpayers Alliance, December 1, 1945).

[9] Laws of 1945 (Wisconsin) Chapters 358, 391.

for each of Wisconsin's eighteen largest cities.

Table II shows the instability of income tax receipts for the same cities

TABLE II. STABILITY INDEXES FOR WISCONSIN CITIES, GENERAL PROPERTY, INCOME, AND TOTAL TAXES: 1929–1944*

CITY	Total Taxes	General Property Tax	Income Tax
Appleton	10.3	13.0	40.6
Beloit	22.4	15.0	108.0
Eau Claire	8.7	7.4	26.2
Fond du Lac	25.6	13.4	63.6
Green Bay	11.9	10.6	49.6
Janesville	25.7	16.7	40.9
Kenosha	11.8	11.8	24.6
La Crosse	22.3	20.9	40.5
Madison	17.1	14.5	60.7
Manitowoc	13.4	7.7	48.8
Milwaukee	10.0	12.4	45.8
Oshkosh	12.7	9.8	47.9
Racine	14.0	14.3	38.6
Sheboygan	18.3	16.7	32.4
Superior	10.0	15.5	33.8
Wausau	20.6	17.2	48.0
Wauwatosa	27.5	20.9	51.7
West Allis	48.9	18.0	196.2

*This tabulation was prepared by Ramona First

over the same period as compared with that of property tax receipts and total taxes. The data are presented in the form of indexes derived by taking the average of the index numbers of each series and finding the average of the deviations from this average. The smaller the instability index, the less the variation in the series which it represents.

A hopeful antidote for instability is the development of reserve funds, as recently recommended by the Moore Committee in New York State.[10] Reserves could be used at either the state or municipal level and could contribute substantially to even the flow of available income tax revenue. Reserves are well worth trying but they confront obvious difficulties: they are subject to diversion following a change in administration and they cannot be planned according to any established pattern of cyclical behavior.

There is also the possibility of developing a new species of income tax along the lines of the experiments now in operation in Philadelphia, Toledo, and St. Louis. These experiments differ among themselves but in general they apply a low flat rate of tax on all net income, with no credits and no deductions except for expenses involved in creating the income. These taxes are collected at the source as far as possible. They apply only to income earned within the municipality and exempt income received from intangibles although the latter is not a necessary feature. A general tax might require some state-imposed rules to prevent multiple taxation. This type of levy could be used by states, or municipalities, or both.

An income tax along lines recently developed by these American cities will be criticized as inequitable because it allows no personal credits and carries a flat rate. As to the absence of credits, several rejoinders are possible. One is that the alternatives to the net income tax—the property tax and the sales tax—also offer no exemptions, or at least none designed to allow the taxpayer his family living expenses. This, of course, is defending the tax on the ground that at least it is no worse than are the available alternatives.

The advantage of disallowing exemptions is that the resulting base is large, stable, and conveniently adapted for collection at the source. A halving of community income typically means a reduction of the tax base to a fifth or sixth of its former size. A tax base of the type here contemplated would suffer only the same loss as income itself.

The most convincing reason for exemptions is that they differentiate among taxpayers according to dependents. The

[10] *New York Times*, December 31, 1945.

differentiation is required to make the tax accord with ability to pay. It would be desirable, if feasible, to allow at least some very limited exemptions in any income tax.

The flat rate of tax is more easily defended. It facilitates collection at the source and avoids reliance upon an unstable element in the income tax revenues. A proportional tax, of course, does not perform the function of equalizing income, but perhaps the equalizing role should be left mainly to the federal government. At the worst, this tax is genuinely and consistently proportional, which is more than can be said for either the sales tax or the property tax.

Two taxes at the state level—perhaps a normal and a surtax—might be the answer. The former would be addressed primarily to the achievement of adequate and relatively steady revenue; the latter to an equalizing role and the maintenance of a progressive element in the tax system. If an additional tax is to be applied by municipalities, it should be confined by state law to the larger ones. Duplicate administration and compliance should be avoided by the states serving as agencies for their subdivisions.

Conclusion

This article has suggested that states and municipalities are at the fiscal crossroads and that none of the available routes to new revenue are clear of obstacles. Some will argue that the obvious answer is that municipalities are spending quite enough and probably too much as it is. Of course, economy in the expenditure of public money is always important. But also true is the fact that the local public should be able to express its preference between public and private expenditure of its own income. If the choice be to devote a large proportion of the new fruits of economic progress to public schools and parks, it should not be frustrated by antiquated tax machinery. Thus we cannot avoid in some cases facing the alternatives posed above. The reader will have surmised that the author wishes to focus favorable attention upon the fourth of these alternatives—the use of the income tax for state and local revenue. He is disinclined to accept the view that the successful use of this tax for state and local purposes is beyond the ingenuity of statesmanship and that state and local tax systems must be confined to regressive and otherwise distasteful levies. He is biased in favor of virile local self-government and a sound financial system to sustain it. If the article arouses some interest in or support for this point of view, it will have accomplished its purpose.

The Mexican Water Treaty: Part II†

By MARTIN G. GLAESER *

THE sustained interest aroused by the Mexican Water treaty among a growing number of the people of the Pacific Southwest justifies an appraisal of its effects, both direct and indirect, for the readers of this Journal. In attempting to congest within the limits of two articles the more vital issues arising out of this negotiation it should be briefly recalled that the treaty was signed Feb. 2, 1944 and submitted to the Senate for its advice and consent. Hearings were held by the Foreign Relations Committee between Jan. 22, and Feb. 21, 1945. The treaty was voted out 18 to 4 on Feb. 23, before any of the five volumes of testimony, comprising 1816 pages of text, could be printed. Considering the importance of the treaty, the attendance of committee members at hearings was scandalously irregular and infrequent. The majority report was filed Feb. 26 and the minority report, signed only by Johnson and Shipstead, was filed March 13th. Senators Pepper and Murray of the minority declined to sign on the ground that they were not sufficiently familiar with details to stand cross examination on the floor.

Debate on the treaty opened on March 16 and continued intermittently until April 18, 1945 when the final vote was taken—with 76 yeas to 10 nays.[1] In the meantime Senator Downey attempted the presentation of three of thirty-five amendments prepared by the opponents to the treaty, but withdrew them on April 6, when their defeat appeared inevitable. A feature of the debate in opposition was the presentation of a letter from Herbert Hoover, opposing the treaty and explaining its background insofar as it related to the Colorado River Compact. Meanwhile a sub-committee of the Committee on Foreign Relations also had been at work upon certain reservations, three of which were originally proposed by Senator Connally but were later amended and elaborated into a set of eleven reservations which became a part of the treaty as passed. Other reservations presented by opponents were defeated.

While there had been some discussion of the treaty in the Mexican press, the text of the treaty, the protocol and the American reservations were not officially released by the Mexican government until April 20, 1945. What amounted to the Mexican equivalent of hearings before committees on foreign relations of the Mexican Senate, were begun on July 31, 1945 and concluded on Sept. 13, with a report to the Mexican Senate on Sept. 27, recommending ratification. Some of the Mexican witnesses did not consider the American reservations to be very clear, but it was deemed to be better policy to clarify them by an exchange of notes than by formal Mexican reservations. These would have to go back to the American Senate, "where the treaty would not find as favorable a climate as that which had prevailed when the treaty was ratified." Accordingly, the treaty went to the Mexican Senate without reservations. Approved by the Senate on the same day, the instrument of ratification was signed by the Mexican President on October 16, with exchange of ratification taking place in Washington as of

† This is the second in a series of three articles. The first appeared in the February 1946 issue, this *Journal*.

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[1] The negative votes were cast by Senators Chandler, Downey, Johnson of California, Langer, McCarran, Moore, Shipstead, Wheeler, Wherry and Young.

Nov. 8, 1945, thus putting the treaty into effect.

The purpose in reciting the above details is to have them as a background for the discussion of the vital issues which is to follow. We are now in a position to make use of the arguments as presented on both sides of the border. For our present purpose it seems convenient to classify and discuss these issues under the following headings: (1) administrative, (2) hydrologic, (3) legal or equitable, and (4) economic.

Administrative Considerations

First of all it should be noted that the treaty, hailed by Mr. Timm of the Department of State "as the most important of its kind in the history of the world" and "as a model for future treaties governing international streams," had to be supplemented by a protocol and eleven reservations before it received the consent of the Senate. It was contended, especially by the Bureau of Reclamation, that the treaty could be interpreted to create authority in the United States section of the International Boundary and Water Commission which would conflict with the authority of other federal agencies. When called to the attention of the State Department, it was said that this was a wholly unintended effect. Accordingly, there was signed on Nov. 14, 1944 a protocol to the treaty by which this conflict of jurisdictions was cleared up. The direct jurisdiction of the Commission is now limited to works along the border which are used exclusively for carrying out treaty functions. This assures that Boulder Dam and especially Davis Dam, immediately below Boulder and already authorized but construction of which was delayed on account of the war effort, would continue under the Bureau's sole jurisdiction as to construction and management.

Practically all of the objections which were to be overcome by means of Senate reservations had to do with matters of administrative law and procedure as provided for in the treaty. These were all the more questionable because the terms of the treaty would stand until Mexico agreed to another or gave its assent to modifications. It was pointed out that the Senate surrendered control of all irrigation, flood control and hydroelectric power interests on international streams between the United States and Mexico, committing Congress to heavy expenditures without adequate controls. The American Bar Association had authorized a representative to appear before the Foreign Relations Committee and to call attention to the fact that the treaty as supreme law of the land granted administrative powers over persons and property within the territorial limits of the United States without legislative control over the commission and without judicial review of its findings or determinations. Broad powers were conferred on the commission over water rights in specifying how a water deficiency was to be prorated. The treaty laid down no standards in accordance with which such prorations might be accomplished.

The legislative history of the treaty shows that while the opponents were unable to convince the majority of the Foreign Relations Committee to recommend interpretive reservations which would limit the powers of the commission, the temper of the Debate in the Senate had made the submission or acceptance of certain reservations appear advisable to Senator Connally and to the State Department. The first three reservations are of special importance although the Mexican Senate's approval of the treaty specifically "refrains from considering, [them] because it is not competent to pass judgement upon them." The

first reservation prevents commitments to make expenditures either by agreement between the two State Departments or the two Boundary Commissioners without prior approval of Congress by limiting such treaty expenditures to the eight specific items provided for in the treaty. The second reservation subjects administrative officials to statutory and constitutional controls insofar as their acts affect persons and property within the United States. The third reservation explains that the treaty does not authorize American officials to alter or control the distribution of water in any of the states, directly or indirectly. The next three reservations limit the meaning of the treaty terms "international dam or reservoirs," "international plants" and "electric current" to such facilities on the Rio Grande. The other reservations serve different purposes. Some serve in one way or another to whittle down the powers of the Secretary of State and the American Commissioner by limiting their jurisdiction to strictly treaty matters. Another serves the purpose of clarifying an ambiguity in water allocation by making certain that the 1,500,000 acre-feet allotted to Mexico are included within the 1,700,000 acre-feet specified in Article 10, and of making sure that the Yuma Project in Arizona will be protected against flood damage and seepage from the projected Mexican Diversion Dam.

It is expected with some confidence that the sum of these reservations will give Colorado river water users a fighting opportunity to protect their rights through appeals to Congress and the courts instead of being exposed to the arbitrary powers of the Boundary Commission and the State Department.

While it is no doubt true that the treaty must be accepted as an accomplished fact whether one likes it or not, the efforts in Congress to secure interpretations or definitions of some of the treaty's worst ambiguities should prove helpful. For instance, the meaning of "extraordinary drought" and "quality of water" which in their original treaty form might have cost the United States additional hundreds of thousands of acre feet of vital water in the future have been clarified by these reservations. While such post mortem and unilateral attempts to cut treaty losses are not very satisfactory yet it was imperative that an attempt be made to secure such clarification before large appropriations are made for Colorado River Projects required under the treaty and before Congress loses all control over the significance of the treaty's terms.

Hydrological Considerations

The greatest error in judgment was made when the American negotiators of the Mexican Water Treaty combined the watershed of the Colorado river with that of the Rio Grande in one transaction. Another almost equally serious one was the guarantee of a definite quantity of first-right water to Mexico in a treaty of indefinite duration. The reasons lying back of the above conclusions are that conditions of water supply and use are totally different in the two watersheds and that the records for prognosticating the water supply were so defective at the time in the past when significant decisions had to be made, as to make inadvisable the use of these figures in any long-range international commitments. We will take up first the unreliability of the hydrological data.

The adherents of the treaty contend that the Colorado River in its natural state, before storage dams were constructed, supplied an average annual runoff of 17,835,000 acre-feet which conceals a minimum of 5,675,000 and a maximum of 22,700,000. When the idea began to

take shape about 1920 that the river should be put under control by the construction of a great storage dam in the lower basin, the upper basin states became alarmed lest the normal flow of the Colorado might prove insufficient to supply all the projects. Under the law of prior appropriation this would work out to the disadvantage of those states which were slower in the appropriation of this natural resource. Hence the suggestion was made by Mr. Carpenter of Colorado to control the right to water for future development by means of the Colorado River Compact. The achievement of this allocation in November 1922 came at a time when even more optimistic ideas obtained. The crucial estimate was the average annual discharge at Lee's Ferry under virgin conditions which was based upon hydrologic data for the period from 1897 to 1921. Serious doubt is now cast upon the adequacy of these water supply estimates which are basic not only to the Colorado River Compact but also to the Boulder Canyon Project Act of 1928 and to the various water-user and power-user contracts flowing from this Act. Testimony[2] as to the unreliability of these estimates comes from Prof. G. E. P. Smith, the well known irrigation authority of the University of Arizona, whose point of view throughout these years of controversy has certainly not been favorable to the claims of California.

He points out, for instance, that a high-class gauging station had not been installed at Lee's Ferry until June of 1921. The estimates used were based upon a synthesis of tabulations of the historical stream flow at Lee's Ferry as derived by E. C. LaRue, then engineer for the Geological Survey. This tabulation was needed and used by the Colorado River Commission in 1922 and accepted by all hydrologists as reasonably accurate. But now the hydrology of the river needs revision and unfortunately must be revised drastically downward. In 1922 the figures indicated a total water supply in the basin of some 21 million to 24 million acre-feet. Smith's own studies at that time indicated 20,500,000 acre-feet. Other confirmatory evidence of the need of the revision downward comes from a renewed study of stream flow by W. E. Dickenson, hydrologist of the Geological Survey, and published in 1944 as Water Supply Paper 918. There was no disposition to criticize LaRue's early estimates because they were based upon legitimate methods. For instance, where data were incomplete or lacking, the run-off of some tributary basins was estimated by comparison of areas, physiography and vegetal cover with near-by basins. Moreover, stream measurements prior to 1920 were crude in comparison with those used since.[3] Both equipment and techniques have been greatly improved and now cover the entire upper basin. There were gaps in the stream flow data available to LaRue. Smith, therefore, concludes that "the first eight or ten years of the LaRue estimates are probably the poorest in accuracy." We quote the pertinent paragraphs of his study at length.

"Other evidence has been sought to indicate the probable rainfall far back before 1881. It is quite certain that the deficiency period began ten years before 1881; also, that the period 1921 to date is a fair sample period on which to base the future development of the Colorado River. The wet period, 1906–1929, may perhaps occur

[2] George E. P. Smith, "Arizona Reclamation Limits."

[3] In the article referred to, Smith makes these comments: "On some of the gauging stations in Arizona, engineers used to feel lucky if they got one or two gaugings at flood flow in a year. As late as 1918, Joe Kunesh worked with one helper, sometimes with none, to cover the whole state. When the floods were at their best, very likely he was trying to dig his car out of the mud at some isolated spot. Then, too, dependence was had on reading a gauge twice a day or once a day instead of on continuous recording gauges. The old records should have had 'plus or minus 20 percent' written after the figures."

once in 100 years. So also may a severe drought period of from 15 to 35 years.

"Again it may be asserted that the LaRue estimates should be discarded. If engineers cling to the period of accurately measured record, they will have a solid basis for studies and estimates."

We give below these several estimates of average annual flow at Lee's Ferry, the point of division under the compact.

		Acre-feet
1922.. Estimated by LaRue.....	(1897–1921)	16,856,000
1934.. Estimated by Dibler.....	(1897–1921)	17,390,000
1944.. Estimated by Dickinson...	(1897–1921)	15,720,000
1944.. Estimated by Dickinson...	(1897–1944)	15,894,000
1944.. Estimated by Dickinson...	(1922–1944)	14,996,000

On the basis of the last of the above revised estimates, Mr. Smith comes to the conclusion that under full upper basin development, and assuming that California and Nevada will obtain most of their contracted amounts while Arizona will only get water for projects now under construction, the effect of the Mexican Water Treaty will be a deficit of 525,000 acre-feet with nothing available for future development. Owing to lower priority, Arizona will be left out. As the writer remarks:

"When the investment has been made and the land is settled with the people—people with voices and votes—the water will be forthcoming. A corollary to that theorem is that a representative from such a district will make sure that Congress does not authorize other undertakings which might reduce or destroy the water supply for his constituents."

And so the author concludes that:

"from a consideration of hydrologic data alone the treaty is a boon to Texas but a blow to the Colorado basin states, especially to Arixona with its lowest priority. On April 18, when the Mexican Water Treaty was ratified, Arizona's last chance faded."

Dramatically he ends on this note:

"My purpose has been to present the unpalatable hydrologic data without flinching. I hope I am a realist. More brilliant minds than mine may devise ways of dividing drops of water and doubling them like the amoeba or of making one acre-foot of water accomplish the duty of two."

To which the present writer is tempted to add that he is also somewhat of a prophet for, in 1928, before the Boulder Project Act was passed he wrote:[4]

"It has already been pointed out how Mexico comes into this picture. How much water shall be granted to Mexico? It is essential to settle this problem at once, before the construction of any dam is completed, for whether it be at Boulder, or at Dewey, as soon as river regulation is effected and the low-season flow is increased, the application of water to Mexican lands will grow apace. On the lower Rio Grande, where the reverse situation exists, the American land-owners are fearful that the increasing development of irrigation along the Salado and the San Juan and the Conchos rivers, in Mexico, will shut off their supply. It is conceivable, yes, probable, that Texas will favor selling Colorado River water to Mexico in return for waters of the Salado and Conchos rivers."

In his letter to Senator Hawkes, Herbert Hoover confirms the facts as to the paucity of hydrologic data available at the time the Compact was drawn up. He admits that stream flow records were available for so short a period that the commission was "compelled to keep the allocation to the different areas within safe limits . . . But it was thought better to proceed for a period of years until a more accurate determination could be made, both of the water supply and the requirements of the several states, before attempting a final allocation of the complete supply." And now it appears that what was regarded as safe limits leaves no margin of supply for either an allotment to Mexico or for redistribution between the basins and the states concerned. He comments upon the fact that so far as the upper basin is concerned, the allocation of 7,500,000 acre-feet per annum was then regarded as ample. Now

[4] George E. P. Smith, "Harnessing of the Colorado River, *Pan American Geologist*, Vol. 54, p. 60.

it is realized that, owing to reduced run-off during dry periods and the increased need of transmountain diversions, the allocation will fall far short of ultimate needs. Diversions to other watersheds then estimated at 750,000 acre-feet are now variously estimated to aggregate between 2,000,000 and 3,000,000 acre-feet. It should be noted that there will be no return flow from these diversions into other watersheds. He also points out that what was then not considered a burdensome requirement (that the flow of the river into the lower basin be not reduced below 75,000,000 acre-feet in any ten-year period) will now require 20,000,000 acre-feet of holdover storage for low-flow periods comparable to that from 1931 to 1940 or, in default of such storage, to limit beneficial use to 64% of the upper basin allocation. In the lower basin also it was not anticipated that within 20 years an aqueduct requiring in excess of a million acre-feet would be in operation to carry water to the parched but populous coastal plain of Southern California. Similarly, it would have been deemed "fantastic" that an irrigation project involving 80 miles or more of continuous tunnels to carry water to central Arizona would soon be under detailed study. These recent developments point to the inescapable conclusion that the water supply of the "last water hole" of the Southwest is running out, while the value of this natural resource is being steadily enhanced.

For present purposes it is unnecessary to discuss the Tio Juana River because its annual average run-off has been estimated at a mere 16,200 acre-feet.

The present treaty is concerned only with the waters of the Lower Rio Grande. For this international stretch from Fort Quitman to the Gulf it is estimated that the average annual run-off from the 58,119 square miles on the American side is 2,470,000 acre-feet and from the 81,536 square miles on the Mexican side 4,712,000 acre-feet—a total of 7,182,000 acre-feet. There was no evidence adduced at the hearings which would question the substantial accuracy of this supply. Certainly there is lacking that note of anxiety which permeates the argument over the Colorado's waters. The Mexican representatives calmly assert that they saw to it that the United States did not receive a third part of the virgin run-off but only a third part of the surplus "after having made all the use possible of the waters of these tributaries within national territory."[5] This would expand the cultivable area of 313,800 acres, achieved between 1900 and 1943, to 778,400 acres in the future. In his report to the Mexican Senate, Engineer Alba, chairman of the National Irrigation Commission, said that his commission "before negotiations of the treaty, studied the form of making use within the basin of each Mexican tributary of the Rio Grande [of] the maximum possible volume of the water of said tributary." For instance, it was found that in the case of the Conchos River the present utilization of 170,000 acres of land could be increased by 116,700 acres of land with the construction of numerous new dams. Despite such regulation the extraordinary flood waters of the Conchos River and the return water from irrigation will create surpluses which will average 624,000 acre-feet. Similar analyses of other tributaries applied to a 45-year period yielded surpluses, totalling with the Conchos contribution, 2,346,100 acre-feet. In the same way the contribution of surplus waters to the main stream of the Rio Grande coming from American tributaries was estimated to equal 1,699,200 acre-feet or

[5] "Water Treaty of Colorado River and Rio Grande Favors Mexico," *El Universal*, (newspaper Mexico City) August 1, 1945, translation in Sen. Doc. No. 98, 79th Cong., 1st Session.

42% of the grand total of 4,015,300 acre-feet for the river as a whole.

It seems worthwhile at this point to carry further these Mexican estimates of the distribution of surpluses in accordance with the treaty. Of the Rio Grande surpluses (4,015,000 acre-feet) 49%, or 1,962,000 acre-feet, is apportioned to Mexico and 51%, or 2,053,000 acre-feet, to the United States. Combining these with the maximum irrigation possibilities as obtained by the treaty from the Mexican allotment of Colorado River waters yields the following summary—which shows at a glance the net advantages derived by Mexico from the treaty transaction.

	Without Treaty *Hectares*	With Treaty *Hectares*	Acre Equivalent
Irrigable areas on Colorado River	0	200,000	494,200
Irrigable areas on Rio Grande River			
(a) In basin of Mexican tributaries	315,000	315,000	778,400
(b) Mexican part of the Delta	0	245,000	605,400
TOTAL	315,000	760,000	1,878,000
Difference		445,000	1,100,000

One would seek in vain through the voluminous report of the hearings before the Foreign Relations Committee or in the Senate proceedings for anything which approaches in clarity of presentation or which throws into equally clear focus the comparative advantages and disadvantages derived by the United States from this latest venture into international negotiations.

We will conclude this hydrological portion of the discussion by quoting a caveat from Delph E. Carpenter, water commissioner of Colorado, and father of the compact plan of settling the problem of water distribution in the Colorado basin. While what he said was with reference to interstate compacts, the cautionary words apply equally well to international treaty-making.[6]

> . . . "The 'do it now' fad prevalent in the business world has no place . . . in interstate river commissions . . . A good compact is a blessing. A poor compact is worse than none . . . Compacts hastily drawn . . . should not have been conceived. Although interstate river compacts were but recently adopted as a method of dealing with acute river situations, already there are signs of a disposition to hastily negotiate them. . . . We must proceed with caution. Undue haste is worse than no action at all. . . . Compacts fix the destinies of millions of people yet unborn . . . They are the basis of titles which will be of fabulous ultimate values."

Legal and Equitable Considerations

Even the proponents of the treaty more or less reluctantly agreed that the total water supply of the Colorado River can not possibly meet the requirements of the known feasible projects in the United States, let alone satisfy the guaranteed primary right to 1,500,000 acre-feet for Mexico per annum. It is, therefore, important to consider the legal and equitable considerations which should govern the distribution of the limited supply. In this connection it is important to recall that the treaty obligates the United States to construct Davis dam at its own expense in order to reregulate the releases of water from Boulder Dam and furnish additional storage space for the furnishing of water to Mexico according to their irrigation requirements.

From an equitable point of view it is necessary to go back to the use of water by Mexico before Boulder Dam and the All-American Canal were constructed. The use of irrigation water by Mexico under the old arrangement had never exceeded 750,000 acre-feet and was usually much less. This is the amount that seems to have been in the minds of those in charge of these developments as the

[6] Quoted from Smith, *ibid.*, p. 46.

quantity which Mexico could equitably claim. Such an offer of a guaranteed amount was made by the Meade Commission in 1929 when the first attempt was made to come to terms with Mexico. This offer paralleled the basis upon which a similar situation had been resolved in 1906 when 60,000 acre-feet were allotted to Mexico for irrigation purposes out of the stored supply of water in Elephant Butte Reservoir on the upper Rio Grande River. The Meade offer recognized Mexico's prior right of appropriation in addition to furnishing this supply under controlled conditions, freed from the menace of floods and of the silting problem. If there had been no intervening international boundary it would seem that this would have been the equitable settlement in accordance with both law and custom. It is an old principle of water law that the stored supply is the property of the reservoir owner. If additional supplies would have been made available to irrigators in the delta region beyond those available under natural flow conditions, they would have been required as citizens to share in the costs of the storage works.

The supervening international boundary makes these equitable principles unavailable as domestic law but they were deemed to be applicable under custom and international comity. Only the exigencies of an international negotiation, in which bargaining power at one point was used as a trading advantage at another and weaker point, made it appear advisable to turn down the offer based on equitable custom and place reliance on arms-length trading. At this point the American negotiators in the state department failed egregiously by refusing to take up the gauntlet and do some trading on their own account in protection of American interests.

The weakness in the American position is that on the lower Rio Grande only 35% of the virgin water originates in American territory while 65% originated in Mexican territory. It is, therefore, much more dependent upon international action to sustain its irrigation ventures in the delta section. Moreover, American tributaries were in a more advanced stage of development. The shortage of irrigation water for American irrigators in Texas was the immediate cause for action.

In its undeveloped state the unappropriated waters of the lower Rio Grande were subject to competitive appropriation. Mexico was using a small volume by means of its El Retamal project to irrigate some 74,100 acres. American irrigators were appropriating 1,150,400 acre-feet to irrigate about 583,200 acres. At this point we will let Engineer Alba tell the Mexican side of the story:

> "But, and this is a decisive but, the United States had already begun some gigantic works with the name of Federal Project No. 5, or Rincon, a project approved by the American Congress which would permit of carrying the total of the waters of the Rio Grande to American territory, with the very reasonable cost of $60,000,000. On the Rio Grande there has existed a 'race' of utilizations on the part of two countries. The United States commenced installing a large number of pumps for taking water from the Rio Grande. Mexico, in 1937, began the use of these waters by opening the small gravity intake of Retamal. The United States answered with the gigantic works of Federal Project No. 5, or Rincon. Mexico would not have resources nor physical possibilities for making an answer to these works, which as we say, would be equivalent to taking the Rio Grande to American terrirory. These works were suspended at the beginning of the present war, but could be renewed on its termination."

The treaty, therefore, will enable Mexico to irrigate 605,400 acres in its part of the delta and will remove the threat of the Rincon project which will then carry only the American allotment under

the treaty. It should be clear from the above that by giving up the Rincon project in its original form the bargaining position of the United States was weakened. Nevertheless, the cardinal weakness in the American position was the speculative overexpansion of irrigation developments in the delta region as compared with the supply of water.

We turn now to consider the legal and equitable situation in which Colorado river water users found themselves upon the opening of negotiations for a treaty combining both watersheds.

First of all it is contended by the proponents that the Compact foreshadowed the treaty. Upon this point the testimony of Herbert Hoover is again pertinent:

> "I am sure none of the Commissioners who negotiated the Compact had any idea that our Government would offer to guarantee Mexico any such amount as the 1,500,000 acre-feet stated in the proposed treaty. At that time Mexico was using about 500,000 to 600,000 acre-feet per year. Her lands were subject to a serious flood menace every year, and the silt in the river water was clogging her irrigation canals and ditches and thus threatening her whole development. It was a serious question as to how Mexico could prevent disaster to the lands she was then cultivating, much less increase that use.
>
> "Now by means of American works, we have controlled the flood water and silt, which is of tremendous value to Mexico. But had it been suggested in 1922 that the United States was to be paralyzed in the future by having to furnish free to Mexico a volume of water, made available by works constructed in the United States, to supply lands made possible of development only because of those works, I know it would have met with the opposition of the Compact framers. Morever, had the Compact negotiators considered such a treaty possible as the present one, I am not sure that agreement on a Compact could have been reached. Certainly, the Compact that was concluded would have been different."

We conclude, therefore, that the present treaty was not within the contemplation of the framers and can not be adduced as a valid reason for refusing to give weight to objections raised by present or prospective water users.

We come now to the Boulder Canyon Project Act and the California Limitation Act. We have already explained how the approval of the Colorado River Compact by the federal government and the going into effect of the Boulder Canyon Project Act was conditioned upon the restriction of California claims to a share of 4,400,000 acre-feet plus ½ of any available surplus. It is this fact which in equity makes one single contractual relationship out of these three separate transactions.

The dominating purpose in the whole arrangement is expressed in the Colorado River Compact as follows:

> "The major purposes of this compact are to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters and the protection of life and property from floods."

While the Compact contemplates that there may be an assignment of water to Mexico, no specific amount is actually assigned and only the *procedure* of adjustment to other Compact relationships is outlined. The Project Act through which the Compact was approved was merely the first step in a series to effectuate the ultimate purpose.

Section 1 of this Act provides:

> "That for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial users *exclusively within the United States*, [emphasis supplied] and for the generation of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking etc. . . "

A mere reading of the above should be sufficient to convince any unprejudiced person who has no axe of his own to grind that the intent of Congress was to

so limit the beneficial use of the salvaged flood waters as to sustain in the main the regional economy of the Southwest. The basin was not defined in the Compact to include the small portion within the borders of Mexico which produces none of the run-off. *Nor was it defined to include any portion of the state of Texas.* To be sure, Mexican land owners might benefit from the unused portion of the stored supply after it reached the international boundary. However, except for the appropriated portion of the natural flow in which Mexican landowners shared with Imperial Valley landowners an equitable claim to first priority water under the common law of water rights for the west, no claim to a high priority could attach to this unused portion of the supply. It was a case of catch as catch can.

Another legal or equitable consideration arises out of the self-liquidating provisions of the Project Act. Before construction could begin the act required the execution of water and power contracts sufficient to insure the payment of all expenses of operation and maintenance and for the amortization within fifty years of the capital invested in these facilities (excepting only $25,000,000 allocated to flood control) together with interest thereon. The Act further provides that all uses of the stored supply must be by contract and that these contracts respecting water for irrigation and domestic service (nota bene not for power) "shall be for permanent service." It is upon the faith of these statutory provisions recited in the contracts that California, Nevada and Arizona water and power users have through various agencies made substantial financial commitments. In the case of California we have seen that they amounted to $549,000,000.

The proponents of the treaty now contend that through the so-called availability clause of the Compact[7] to which all water delivery contracts under the Project Act are made subject all Colorado River water users have agreed in advance to accept any diminution of their contract rights. Against this interpretation the Colorado River Board of California secured the legal opinion of Homer Cummings, a former Attorney General of the United States, and submitted it to the Foreign Relations Committee. We will quote only from that portion of the opinion which deals with this availability clause:

"It is thus clear on the face of it that it is an 'if' provision. It was necessary because, if rights to water should ever be recognized in Mexico, the question would immediately arise whether—as between the signatory states—the burden was to be borne by the lower basin or the upper basin alone out of their respective interstate compact shares or should be divided. The Colorado River Compact neither created nor reserved Mexican rights. It did not even go as far in this respect as it did in Article VII which expressly preserved the rights of Indian tribes. In the nature of things, it could neither create nor reserve because it was merely an agreement between states having no authority over international relations; and as a matter of fact, the enabling act authorized the named states only 'to negotiate and enter into a compact agreement . . . providing for an equitable division and apportionment *among said states* of the water supply of the Colorado River and of the streams tributary thereto' [Act of August 19, 1921, 42 Stat. 171]. Thus, although the Project Act subjects the use of Boulder Dam water to the interstate Colorado River Compact generally, the latter does not and could not either confer or reserve Mexican rights. And Congress by the Project Act did not do so, for Section 20 of the latter expressly provides that nothing in it 'shall be construed as a denial or recognition of any rights, if any, in Mexico to the use of the waters of the Colorado River system'."

We have space to quote only the final conclusion reached by Mr. Cummings with respect to the impairment of legal rights.

[7] See first article, "Mexican Water Treaty: I," February 1946 issue, this *Journal*, p. 6.

"Consequently it is my opinion that, so long as the uses of water possible in Mexico from the unregulated natural flow of the Colorado River are not impaired by Boulder Dam, any arrangement by the United States which would require Boulder Dam storage to be used for Mexico (that is, for purposes outside the territorial limits of the U. S.) would constitute an impairment of the rights of the state of California under its separate compact with the U. S."

(The third, and concluding article in this series will deal with the economic considerations involved in the Mexican Water Treaty and the author will add some personal observations thereon.)

Wages and Employment in the Public Utility Industries

By EDWARD NEUNER, JR.*

THE level of earnings and the stability of employment are factors which play as important a role in the administration and management of public utilities as they do in other types of enterprises. In addition, their relationship to and effect upon the efficient functioning of the utility labor forces is a matter of public concern since, despite the large capital investment in these industries, wages still make up a substantial part of utility expenses and, therefore, affect utility rates. And, perhaps what is more important, the inadequate earnings of the utility labor forces may so arouse the discontent of employees as to make it impossible for the utilities to render the safe and continuous service which is demanded by the public. Such has been the situation recently, when strikes in telephone, street railway and electric utilities have disrupted service and have caused great public inconvenience. This interest in utility labor relations by management and the general public makes a consideration of wages and employment highly significant.

Besides the vital character of utility services which necessitates continuous service at a minimum cost, other factors also have created special wage and employment problems for the utility labor forces:—the extensive price regulation by public authorities utilizing techniques that do not always result in the speedy readjustment of rates; the existence of legal monopoly and large-scale corporate units—both have had important consequences. Is there a serious wage lag due to fixed price structures, so that during periods of rising prices real wages decline sharply but, in periods of deflation, become excessively high? What is the significance, for utility labor forces, of employment in regulated monopolies in an economic environment of competitive enterprise? Does the nature of the utility services rendered make for stability of employment? To what extent do regulatory commissions intervene in the establishment of wage levels and conditions of employment? These are the problems to be considered.

* Assistant Professor of Economics, University of Tennessee.

Utility Wages

The hours and earnings data for three utility industries are presented in Charts 1, 2, and 3. Chart 4 gives the same data

CHART 1. AVERAGE EARNINGS AND AVERAGE HOURS IN THE ELECTRIC LIGHT AND POWER INDUSTRY. 1932–1944, SOURCE FOR DATA ON ALL CHARTS: UNITED STATES BUREAU OF LABOR STATISTICS.

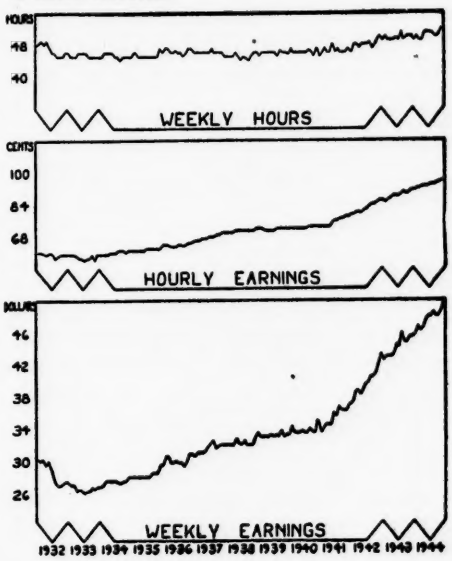
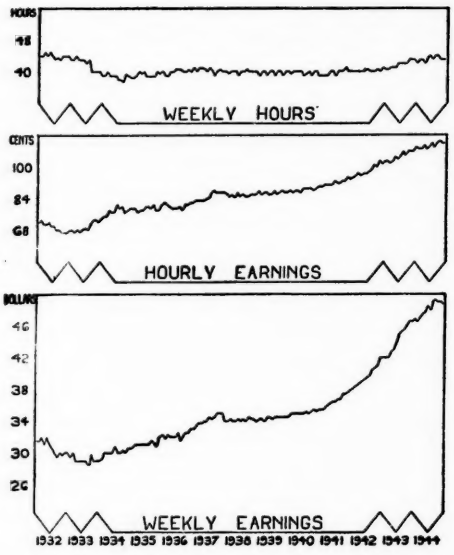


CHART 2. AVERAGE EARNINGS AND AVERAGE HOURS IN THE STREET RAILWAY AND BUS INDUSTRY, 1932–1944.

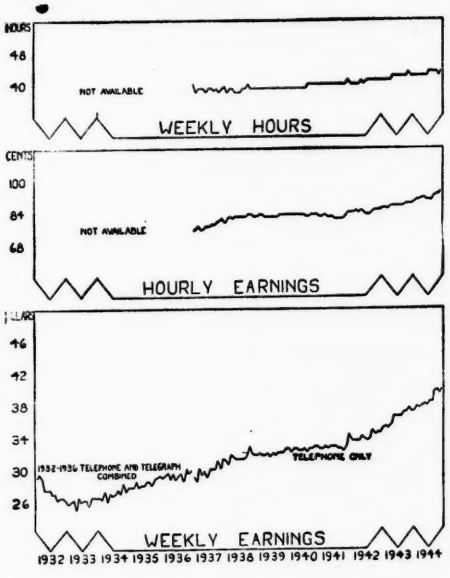


for manufacturing industries which are divided into two general classifications —durable goods manufacturing industries and non-durable goods manufacturing industries. An all-manufacturing classification would be an average of the two. Chart 4 has been included in order that a comparison might be drawn between utility earnings and earnings in a large segment of the national economy. The data in all of the charts have been compiled by the United States Bureau of Labor Statistics. However, the average hourly earnings data given in these charts are not to be construed as accurately representing straight-time hourly rates. As calculated by the Bureau of Labor Statistics, average hourly earnings are obtained by dividing the total weekly payrolls by the corresponding total number of man-hours worked in the industry. Premium payments for overtime will obviously have an inflating effect. Average weekly earnings are affected in like manner by overtime payments. This is to be considered when comparing earnings in the various industries during the war years.

Average earnings and average hours in the electric light and power industry are presented in Chart 1. One notes almost immediately the stability of the work week. The range in this industry is between 39 and 41 hours. Without considering the different levels of weekly employment, the same stability can be observed in the other utilities. It differs very sharply from the situation in the manufacturing industries, as is indicated in Chart 4. In the utility industries a reduction in demand associated with business fluctuations results, for the most part, in the idleness of machines and not of the labor force. A long-run decrease or the prospect of such a decline will, however, lower the level of employment even in these industries.

Average hourly earnings in the elec-

CHART 3. AVERAGE EARNINGS AND AVERAGE HOURS IN THE TELEPHONE INDUSTRY, 1932–1944.



tric utilities showed a smoother upward trend, from the depression year of 1933 to the present, with a higher rate of increase during the war years than that in any other utility. They represent the highest level of earnings in the utility classifications examined. Average hourly earnings in the durable and non-durable goods industries showed an erratic movement with major upward shifts in 1933 and 1937. Hourly earnings tended to stabilize at a constant level after each of these upward shifts.

Average weekly earnings for the electric utility labor force also reflect the high level of wages in this industry. The effect of the 1937 business recession is noticeable; it halted temporarily the upward trend. The earnings reduction was, however, not as severe as in the durable goods industries. It should be noted that the weekly earnings curves in Chart 4 are plotted on a wider scale than is the case in Charts 1, 2 and 3. The cyclical and seasonal fluctuations of durable goods earnings are, therefore, also reduced in intensity as compared to what they would be were the same scale used as in the utility industry charts.

Charts 2 and 3, which present hours and earnings data for the street railway and telephone utilities, show general trends similar to those of Chart 1. The level of the work week in the street railway industry shows a significant variation. Its range was between 45 and 48 hours up to 1941 when the work week averaged over 48 hours. In the same industry, weekly earnings rose progressively during the war. This level of wages, while keeping pace with electric utilities and durable goods industries, is, in part, the result of a greater number of hours worked rather than of a high hourly earnings level. In the telephone utility industry the slight effect of the war upon earnings is noteworthy. The rate of increase of both hourly and weekly earnings after 1941 is less than that in any of the industry groupings considered. Their average level in 1944 was only slightly higher than the consistently low level of earnings in the non-durable goods industries.

The United States Bureau of Labor Statistics did not begin to compile earnings and hours data in the utility industries until 1932. Table I represents an attempt to discover the trends in at least one of the utility industries for a period prior to that date. The statistics were gathered by the National Industrial Conference Board and cover the period from 1914 to 1932 with earnings data as of January and July for most of the period. The figures are not comparable to those given in the previous charts since they do not include clerical and meter department

TABLE I. AVERAGE EARNINGS AND AVERAGE HOURS IN THE ELECTRIC LIGHT AND POWER INDUSTRY:[1] 1914–1932.

Date	Average Hourly Earnings	Average Weekly Earnings	Average Weekly Hours
1914, July	$ .278	$ 14.68	52.8
1920, June....	.545	26.75	49.1
1921, Dec.....	.544	27.54	50.6
1923[2].....	.580	29.48	50.1
1925, Jan.	.615	31.41	49.6
July	.611	31.05	50.8
1926, Jan.	.626	31.29	49.1
1927, Jan.	.632	32.04	49.8
July	.626	31.82	50.3
1928, Jan.	.633	33.16	51.8
July	.635	32.36	50.1
1929, Jan.	.635	32.93	51.4
July	.627	32.44	51.3
1930, Jan.	.648	33.67	51.6
July	.655	34.10	51.7
1931, Jan.	.658	34.39	51.7
July	.660	34.37	51.8
1932, Jan.	.652	32.91	49.2
July	.654	31.79	47.1

Source: National Industrial Conference Board Studies No. 229, *Wages, Hours and Employment in the United States, 1914–1936*, Table 32, p. 162.

[1] Does not include employees in meter departments supervisors or clerical workers.
[2] Estimated.

workers. The general trend and nature of earnings and hours is, however, apparent. The stability of earnings, the longer work week which resulted from the exclusion of clerical workers, and the fact that the weekly earnings peak declined only after 1931 whereas, in most manufacturing industries, the depression decrease began in 1930—these are the most significant facts derivable from the data.

To aid in a summary of the trend and nature of the earnings of utility labor forces, Chart 5 has been plotted on the basis of an average of twelve months for each of the years covered. In Chart 5 it is observed that the level of weekly earnings for the three utility industries during the period from 1932 to 1940 is higher than the manufacturing average. The trends of these utility earnings, for the same time period, were approximately equivalent

CHART 4. AVERAGE EARNINGS AND AVERAGE HOURS IN THE DURABLE GOODS AND NON-DURABLE GOODS MANUFACTURING INDUSTRIES, 1932–1944.

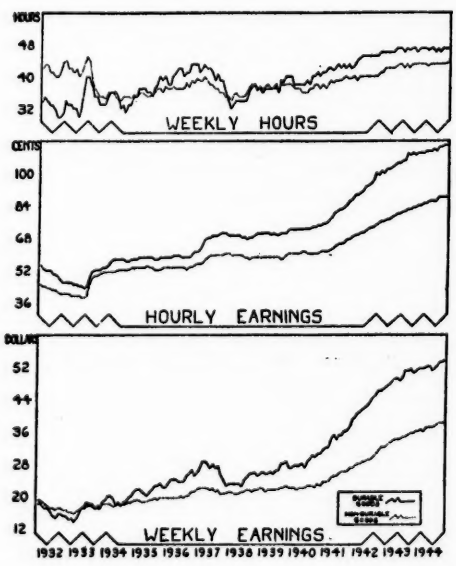
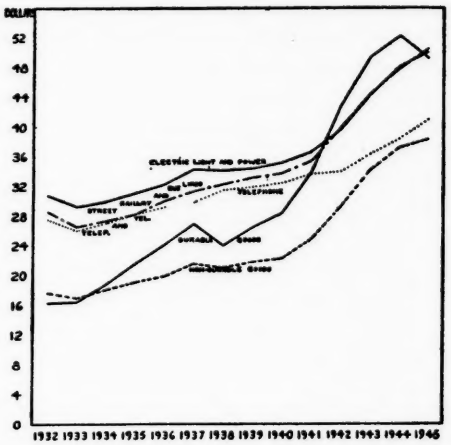


CHART 5. COMPARISON OF AVERAGE WEEKLY EARNINGS IN MANUFACTURING INDUSTRIES AND SELECTED PUBLIC UTILITY INDUSTRIES—AVERAGE OF TWELVE MONTHS, 1932–1944.



and bore a close relationship to the trend in the non-durable goods manufacturing industries. The stability of utility earnings under the impact of cyclical fluctuations was much greater than in the durable goods industries. Of the three utility industries, the electric light and power industry was most affected by the 1937 recession, although weekly earnings did not go into a decline but stabilized at a relatively constant level. The war had its greatest effect upon the weekly earnings of durable goods industries. The rate of increase since 1940 in the street railway and electric utilities, while not as high as in durable goods, equaled the rate of change in the non-durable goods manufacturing group. Telephone industry earnings showed the least response to the war.

Wage Inflexibility

In attempting to discover whether the inflexibility of earnings relative to changes in the price level is an important factor in the wage structure

of the utility industries, as compared with manufacturing industries, reference must be made to the real earnings of the labor forces. Table II consists of indices of actual and real

TABLE II. INDEX OF ACTUAL AND REAL AVERAGE WEEKLY EARNINGS IN TWENTY-FIVE MANUFACTURING INDUSTRIES AND THE ELECTRIC LIGHT AND POWER INDUSTRY; 1914-1936. (1923 = 100)

Date	Electric Light and Power Industry[1]		25 Manufacturing Industries[2]	
	Actual	Real	Actual	Real
1914, July	49.8	81.2	47.7	77.8
1920, June	90.7	73.7	112.5	91.4
1921, Dec.	93.4	93.1	86.5	86.2
1923, ...	100.0[3]	100.0	100.0	100.0
1925, Jan.	106.5	103.4	102.2	99.2
July	105.3	100.9	99.7	95.5
1926, Jan.	106.1	100.4	101.9	96.4
1927, Jan.	108.7	105.1	103.3	99.9
July	107.9	106.3	101.9	100.4
1928, Jan.	112.5	110.8	103.5	102.0
July	109.8	109.5	103.3	103.0
1929, Jan.	111.7	111.9	108.1	108.3
July	110.0	109.7	106.8	106.5
1930, Jan.	114.2	114.5	102.7	103.0
July	115.7	120.8	94.9	99.1
1931, Jan.	116.7	127.5	87.2	95.3
July	116.6	134.8	84.4	97.6
1932, Jan.	111.6	136.8	71.1	87.1
July	107.8	139.1	57.7	74.5
1933, Jan.	102.8	139.5	61.0	82.8
July	104.4	137.9	72.7	96.0
1934, Jan.	106.4	136.9	70.5	90.7
July	109.7	138.3	74.8	94.3
1935, Jan.	109.1	134.4	81.1	99.9
July	110.7	134.3	82.1	99.6
1936, Jan.	110.6	131.8	87.9	104.8

Source: National Industrial Conference Board Studies No. 229, *Wages, Hours and Employment in the United States, 1914–1936*, Table 33, p. 162 and Table 2, pp. 44–47.

[1] Does not include employees in meter departments, supervisors or clerical workers.

[2] Covers only wage earners; all executives, office and sales forces and foremen excluded from study.

[3] Estimated.

average weekly earnings in the electric light and power industry and a manufacturing industry group. The indices, using 1923 as the base year, were computed by the National Industrial Conference Board and were drawn in part from data previously presented in Table I. The table indicated that real wages in 1920 for the electric utility labor force were about 18% below real earnings in the manufacturing group. The reverse of this situation occurred in the next year after the price level had undergone a rapid fall. In December of 1921, real earnings in the electric utilities were 7% higher than the average in the manufacturing industries. Throughout the period after 1923 the trend of the indices of actual and real earnings was approximately the same for the two classifications. In 1929 actual and real earnings, though on different levels, were equivalent for both industry groupings. After 1929 the relative inflexibility of electric utility earnings, even in a period of severe business depression, can readily be seen. Actual weekly earnings were still 3% above the 1923 level in January of 1933 while manufacturing earnings had declined 39% from the same base. In the face of a falling price level, this stability could only result in the increase of real earnings. The real earnings of the electric utility labor force for the period from 1931 through the end of 1934 were at an average index level of 136; the manufacturing industry labor force, represented by the data for the same period, had real earnings at the average index level of 90. In effect, the electric utility labor force throughout this period enjoyed a standard of living 36% better than in 1923; in 1929 it had been only 10% higher. As is indicated in footnote 1 of Table II, the data do not include the earnings of clerical workers. Since earnings in clerical occupations have a certain inflexibility peculiar to themselves, the effect of their inclusion would be to heighten the tendency indicated.

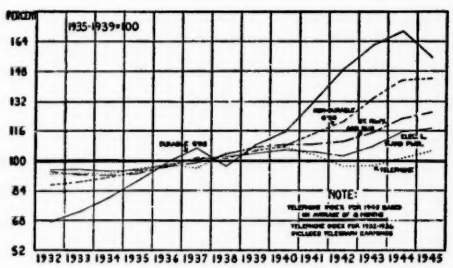
The trend of real earnings for the utility labor forces during the period after 1936 and including the wartime experience is presented in Chart 6. In the development of this material an

index of actual earnings for the industry classifications plotted was first constructed from the annual figures given in Chart 5. This index was then changed to an index of average weekly *real* earnings by dividing through with the United States Bureau of Labor Statistics annual average index of the cost-of-living which uses as a base the period 1935-1939. It should be noted that this cost-of-living index has been held, particularly by labor groups, to underestimate the changes in living costs. In December 1945, the Bureau of Labor Statistics index stood at 129.9. It should also be pointed out that the indices of real earnings can best be used to show trends. Since they are derived from averages—either monthly or annual—of the basic data which have been collected so as to cover the entire country, the indices may not reflect the situation in any particular utility plant or system.

The various index series in Chart 6 are designed to show percentage changes in average weekly wages after the different levels of earnings in the utility and manufacturing classifications have been placed on a common base. With respect to the improvement of the utility worker's wage position during the war, the indices show clearly that he has lagged behind the manufacturing labor forces. Even if allowances are made for the inflating effect of premium overtime payments upon the data, the trends are not materially changed. In 1944, assuming a basic work week of forty hours, the durable goods industry classification received overtime for an average of 6.6 hours per week; the non-durable goods industry classification, 3.1 hours; the electric utility industry, 3.2 hours; and the telephone industry, 2.2 hours. For the street railway industry the increase in average weekly hours worked between 1940 and 1944 amounted to 4.1 hours. In a comparison of earnings among utility and manufacturing industries during the war years, only durable-goods was disproportionately affected by overtime payments and that was only to the extent of approximately 3.5 hours in 1944.

For the period between 1940 and 1942, the characteristic inflexibility of utility earnings in the face of price-level changes created a situation where the real earnings of the electric utility labor force declined from their 1940 level, where the street railway and bus earnings remained constant and where the telephone worker saw his real wages decline in 1942 below the base period level and remain there throughout 1943. In contrast, the sharp upward climb of real earnings in manufacturing industries started as early as 1940 and continued through 1944. This decline in utility labor force real income can be adequately explained only in terms of an increase in the price level and the characteristic wage lag since actual wages during the period did not change. And, of the three utilities examined, the telephone industry seems most affected by the lag. This is also evi-

CHART 6. COMPARISON OF INDICES OF AVERAGE WEEKLY REAL EARNINGS IN MANUFACTURING INDUSTRIES AND SELECTED PUBLIC UTILITY INDUSTRIES—AVERAGE OF TWELVE MONTHS, 1932–1944.



denced by the situation in 1937 when the increase in prices due to the business peak reached in the first half of that year was sufficient to cause a decline in real earnings which was immediately made up in the recession period of 1938.

Another significant change which has taken place since 1940 has affected the relationship between the level of actual earnings in the utilities and the level of earnings in the manufacturing industries. In the period before 1940 (Chart 5) the actual earnings in the utilities were on a higher level than earnings in the manufacturing group. This differential, establishing itself in normal times and extending over a period of years, is presumably necessary in order to obtain and retain the skilled labor force needed to render efficient service to the public. Of course, this differential increased during the depression of the early 'thirties, again due to a substantial wage lag. Yet, even for the period between 1937 and 1940, it represented a sizeable amount. Since 1940 that differential has been narrowed; for the durable goods manufacturing industries it has been eliminated. This change is also evidenced in Chart 6 where the proportionate change in real earnings has been so much greater than for the utilities. In order to maintain the differential, the change should not have exceeded that for the utility labor forces. The significance of this new situation resides in the fact that, while utility workers may have increased their real earnings, they may still be discontented and may prevent the stabilization of labor-management relations, so necessary to continuous and efficient utility service, because the change in real earnings has not been proportionate to that in other industries.

That a problem of a relatively inflexible wage structure exists in the utility industries seems apparent from the statistical evidence. Such problems exist also in other fields, particularly in service industries. Certain factors, however, make the problem especially acute in the utilities. These will be examined below. In addition, the effects upon the public are also greater and more pressing because of the vital character of utility service in the national economy.

The causes of this wage readjustment problem, which is such an important factor in the wage structure of the utility industries, are to be found in two characteristics of utility enterprise —fixed price structure and monopoly. The regulation of utility rates by public authority makes difficult an adjustment of utility earnings to the varying levels established in competitive industry. Many commissions have refused to authorize an increase in rates to cover a contingent wage increase so that a utility concern may have to accept a reduced net income before lengthy rate proceedings bring relief. Labor force unrest and service deterioration, in many instances, are permitted to grow until commissions take notice and make provision in new rates for the higher wage levels. Consumer pressure against utility rate increases may prevent suitable action until the situation becomes quite bad.

In periods of price level decline there is generally not as strong a consumer pressure for a downward revision of rates and, therefore, wage costs, to a point consonant with the changed national price structure. Commissions are also restricted to influencing wages through their right to pass on the reasonableness of operating expenses. Direct interference in the establishment

of wage rates is considered an infringement upon the prerogatives of management. The South Carolina Commission was almost alone, in the action it took during the 1930 depression to reduce earnings of utility employees to a point consistent with lower living costs. The reduction was effected by reducing the amount of wage costs permitted in the operating expense allowance for the companies concerned. Nor does management, on its own initiative, necessarily seek a reduction of the earnings of the utility labor forces. Savings from such economies may increase its return if rates also are not lowered. And an enlarged return during such a period is a more likely cause for commission rate reduction proceedings. A reduction of this sort would require time to recoup if a rise in the price level should occur again. Experience during the depression of the 'thirties seems to indicate that management does not have a real incentive toward maintaining wage expense in line with the competitive level of earnings, particularly if its own return is not affected.

The monopoly position of utilities in a localized market is another cause for the inflexibility of utility labor force earnings in periods of price-level change. The monopoly of utility service, granted by the public to individual enterprises, also places them in a monopolistic position where their labor forces are concerned. There is a limit in the degree to which employees within the utility labor forces can compete for jobs in other industries. The specialized training which they possess cannot always be utilized completely in other industries. For example, a load dispatcher, a gas-maker, a lineman or even a meter-reader would have difficulty finding jobs outside the utility industry in which their skills could be utilized to the fullest extent. And utilization of less than their full skill would mean smaller earnings to the worker unless the less-skilled jobs paid a higher rate than their present employment. The monopoly of specialized job opportunities by a single concern in a local area, usually coterminous with the average geographical mobility of a worker, is, therefore, a potent factor in preventing an exodus of employees from the utility industry when earnings fail to keep pace with the change in living costs.

Even in the case of common laborers where limitations on job mobility by skill and training presumably do not exist, there is a wage lag in the utility industries. Table III presents a comparison of hourly entrance rates of common laborers in manufacturing, public utility and building construc-

TABLE III. AVERAGE HOURLY ENTRANCE RATES OF ADULT MALE COMMON LABORERS IN THIRTEEN INDUSTRIES BY INDUSTRY GROUP: 1926–1942.

(cents per hour as of July 1st of each year)

Year	Nine Manufacturing Industries	Three Public Utility[1] Industries	Building Construction Industry
1926	40.1	42.0	47.1
1927	39.9	39.8	48.2
1928	40.2	42.9	47.4
1929	40.7	42.8	48.3
1930	40.5	44.6	47.0
1931	38.3	44.6	42.6
1932	31.8	41.5	39.9
1933	30.5	38.7	38.3
1934	40.7	41.8	45.5
1935	41.5	42.0	48.1
1936	42.5	43.7	50.9
1937	48.6	46.3	55.1
1938	48.6	47.9	57.8
1939	48.7	48.5	60.1
1940	49.8	47.7	60.1
1941	55.9	50.2	64.8
1942	61.6	56.3	72.4

Source: U. S. Bureau of Labor Statistics Bulletin No. 733, *Hourly Entrance Rates Paid to Common Laborers—1942*, Table 8, p. 16.

[1] Includes electric light and power, electric street railway and city motor bus and manufactured and natural gas industries.

tion industries. In 1932 average hourly entrance rates in the utility industries were 10 cents per hour higher than the manufacturing average. In 1942 utility entrance rates were 5.3 cents lower than manufacturing. The explanation for the lack of a wage level in the utility industry that is neither more nor less than that in other industries for an occupation where competition among employers and among workers is least hampered by limited job opportunities for specialized skills resides in the fact that even unskilled laborers will not risk job security, job seniority, and advancement opportunities in order to shift to a perhaps temporarily higher-paying industry. Nor is there any particular incentive for management in utility enterprises to drive wage rates to the competitive level and lose employee good-will.

While the monopolization of specialized job opportunities by utility enterprises is a factor in preventing the adjustment of wages to the competitive standard, the same monopolistic position gives a certain leverage to the utility labor force. The employees of a utility company in a localized area represent the only supply of those same skills. The costs of training new workers tend to act as a restraint in the lowering of wage rates during price level decline. They are also a reminder to management that the continuance of an inadequate wage level during a period of upward price movement may be more costly than a wage increase. The loss of workers in the utility labor forces, however, during such a period when wages lag behind the change in other industries is not always the immediate result. Labor force unrest and collective action for wage increases usually come first. And such unrest, as has been pointed out, can have serious effects upon the ability of the utility industries to carry out their public obligations to render continuous service.

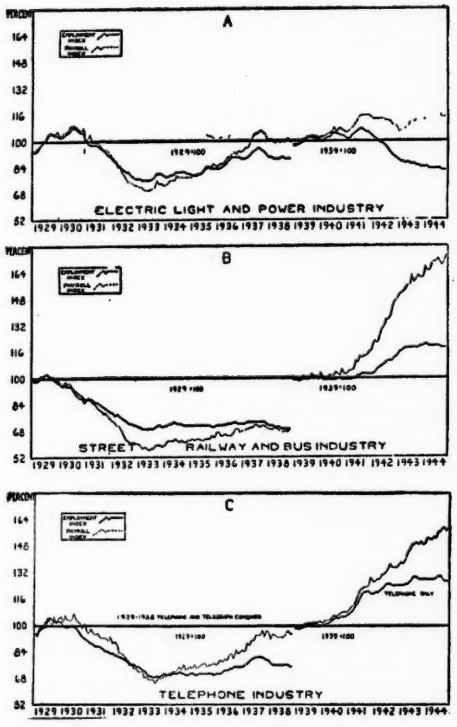
Utility Employment

It has already been noted (Charts 1, 2 and 3) that the work week of the utility labor forces is unusually stable in comparison with manufacturing labor forces. This stability is inherent in the nature of utility services. Electricity, telephone, and transportation service must be continuous and sufficient to meet any reasonable demand; there can be no building-up of inventories nor can there be any company-wide shutdowns or reduced operations to await a change in business conditions. The utility labor forces, regardless of variations in their size, are, for the most part, employed full-time. The issue to be considered here, however, relates to the stability of the size of the utility labor force. Is the amount of employment in the utility industries affected by cyclical business fluctuations? What has been the trend of utility employment since 1929? What have been the causes of the movement? It can be stated at the outset that, at least in the electric and telephone utilities, a certain amount of variation in demand can be absorbed without necessitating increases or decreases in the labor force so that the industry is not as sensitive to minor business fluctuations as is the case in manufacturing industries. In the electric utilities, kilowatt-hour production can be increased or decreased by varying the utilization of the machinery, with little or no change in the labor force concerned with production and distribution. Similarly, a minor increase or decrease in telephone calls can be absorbed by the switchboard operating

force without influencing the employment of the remaining employees.

Chart 7-A, B and C shows the trend of employment and payrolls in three

CHART 7. INDEX OF EMPLOYMENT AND PAYROLLS.


A
ELECTRIC LIGHT AND POWER INDUSTRY
B
STREET RAILWAY AND BUS INDUSTRY
C
TELEPHONE INDUSTRY
1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944

utility industries. Employment in these utilities had declined in 1933 at least 25% from the 1929 base level. In two utilities—telephone and street railway industries—there was little or no upward movement to regain the loss before 1941. An examination of the indices of employment and payrolls for the electric light and power industry indicates that employment in this industry did not begin to fall off until after 1930. The same holds true, to a lesser extent, for the telephone industry. Construction, undertaken by these utilities during their expansion in the 1920's, was still incomplete when the general business slump, after 1929, began and was, in part, the reason for this lag. Electric utility employment, after reaching a low point in 1933, moved upward until 1937 when the business recession resulted in a new cut-back of the labor force. Employment in this utility during the war period declined approximately 16% below the 1939 level. This situation, a result of the military conscription and manpower scarcity, was met by eliminating new construction, reducing new service extensions, and extending the billing period for consumers to 60 or more days. The latter technique permitted a reduction in both meter-reading and office employees. The Consolidated Edison Company of New York, when it sought commission approval of a change to a bi-monthly system of billing, estimated that the plan would eliminate over 1,000 jobs.[1] Whether such changes in the utilization of the labor force will be continued in the postwar period will, undoubtedly, be a vital factor in determining the level of employment of electric utility labor.

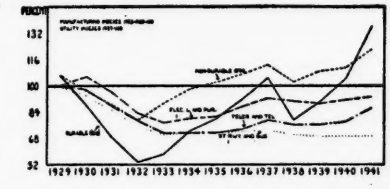
Employment in the street railway and bus industry, shown in Chart 7-B, declined immediately after 1929 and then became stabilized at this lower level. The enlarged labor force, during the war period, still did not reach the 1929 level. The index of payrolls in this industry also tended to fall further and rise higher than employment. This reflects the relatively sharp changes in labor force earnings in response to changing business conditions. The telephone utilities also showed a substantial decline in employment during the depression with a marked recovery since

[1] *Re Consolidated Edison Co. of N.Y., Inc.*, 48 P.U.R. 13 (N.Y. 1943).

the war. The extensive employment of women in the industry permitted such enlargement in the face of war manpower needs.

A comparison of indices of employment in manufacturing industries and utilities is made in Chart 8. The utility indices have been calculated from the same data as in Chart 7, although only 1929 was used as a base year to indicate to what extent employment had regained pre-depression levels by 1941. It can be seen that the decline of employment in the utilities started after the downward trend had begun in the manufacturing industries, and extended beyond the period in which the trend was reversed for the durable and non-durable goods industries. Employment in the utilities, between 1930 and 1932, declined at the same rate as did non-durable goods industries and, in addition, reached a lower level. The effect of the 1937 business peak and subsequent slump on the level of utility employment, while noticeable, was hardly as severe as in the case of the two manufacturing categories.

CHART 8. COMPARISON OF INDICES OF EMPLOYMENT IN MANUFACTURING INDUSTRIES AND SELECTED PUBLIC UTILITY INDUSTRIES—AVERAGE OF TWELVE MONTHS, 1929–1941.



One significant fact to be observed from the data of Charts 7 and 8 is that the three utility labor forces underwent a reduction in size that was of such magnitude (28%) that, by 1933, it was approximately proportionate to the all-manufacturing decline in employment. And the rate of decline in utility employment, though not as great as that in the durable goods category, was the same as the rate of decrease in the non-durable goods manufacturing industries. Assignable causes of this reduction of the three utility labor forces in 1933 include the substantial reduction of demand for utility services, the cessation of new construction and expansion, and the more efficient utilization of the remaining utility labor forces.

Despite the relative inelasticity of the demand for utility service, kilowatt-hour production, telephone service and the number of revenue passengers in the street railway utility declined sharply under the impact of a severe business depression. The effect of this decline reacted immediately and continuously upon the size of the labor forces. The business depression must be considered the prime cause for the steady drop in employment during the period 1930 through 1933; the halting of new construction in the utility industries would only have increased the rate of decline for a short period. In the street railway industry new construction was not an important factor. The importance of the business depression as a cause of utility unemployment is seen particularly in the electric utility industry where there is a direct relationship between the levels of industrial production and the industrial demand for electric power.

A second factor which played an important part in the decline of utility employment after 1930 was the displacement of workers through mechanization. During the 1920's the large increases in the productivity of electric utility employees and telephone workers, due to improved technology and mechanization, did not result in the displacement of the labor forces because the expansion of the industry was able to absorb them. With

the cessation, temporarily, of further expansion, the labor which was displaced by the continuation of the trend toward greater productivity was added to those made unemployed by the business depression. In the street railway utilities, the abandonment of many electric railway operations in favor of bus service and the reduction of the labor force involved in one-man trolley operation and other devices had a similar effect.

Improved technology and mechanization, however, were even more important in explaining the failure of utility employment to regain 1929 levels during the revival of business activity in the late 1930's. After 1933, the period during which the size of the utility labor forces was at its lowest, employment in the utility industries became stabilized at this new level. The increase in employment that did result from the improvement of business conditions took place chiefly in the electric utilities. Even here the rise in employment through 1937 was due in part to the continued expansion of the industry. In the telephone industry, the increase was negligible; in the street railway utilities, employment was stabilized at the low 1933 level. The fall in utility employment after 1937 emphasizes what has been pointed out previously; namely, that the amount of utility employment is affected by cyclical business fluctuations, though not to the degree found in certain manufacturing industries. The trend of utility employment in the late 'thirties, stabilized at the low level of 1933 even though business conditions had improved, seems explicable only in terms of increased labor productivity and mechanization for the expanding electric and telephone utilities; in terms of a permanent reduction of consumer demand for the declining street railway industry.

The development of more efficient generating equipment, the integration and coordination of operating organizations and the introduction of labor-saving devices and equipment, such as pulverized coal, unattended sub-stations and hydro-electric generating units, have permitted the electric utility industry to meet electric power demands that were even greater than the 1929 level with a reduced labor force. The extent and effect of these developments during the 1920's was brought out in a study by the United States Bureau of Labor Statistics.[2] The study indicated that the number of unattended sub-stations in five representative electric utility systems had increased, in 1930, 320% over the base year of 1920. The number of such unattended units in the five systems rose from 46 in 1920 to 193 in 1930. With regard to the loss of employment opportunities, the study showed that, in six utility systems, for an average ten-year period prior to 1931, the percentage loss of job opportunities due to changes in productivity ranged from 23% to 111% with an average loss of 58%. The statistical technique used was to compare the estimated number of employees that would have been required had there been no change in productivity since the base year with the actual number of employees in 1931. Only operating and maintenance workers in production, transmission and distributing departments were included in the data. The study also indicated that in the six systems the increase in output per man-hour ranged from 4% to 55% with an average increase of 31%. While the above data deals with the period between 1920 and 1930, an extension of the trend in great measure accounted for the fact that electric utility employ-

[2] U.S. Bureau of Labor Statistics, *Monthly Labor Review*, "Labor Productivity and Displacement in the Electric Light and Power Industry," August 1932.

ment did not regain 1929 levels since displaced labor in the industry was no longer being absorbed by the expansion of service.

In the telephone industry the greatest single cause of an increase in labor productivity per employee has been the conversion of local telephone switchboards from manual operation to automatic dial operation. While manual switchboard operation is still required for toll calls, a large percentage of the simpler toll calls also are being handled automatically. In a study of automatic switchboard operation, the United States Bureau of Labor Statistics estimated that complete conversion to dial operation in the telephone industry would eventualy mean a loss of about two-thirds of the employment opportunities afforded by manual operation.[3] In the same study, the effect of the dial system conversion in the Bell System operating companies upon job opportunities during the 1920's was also examined. The number of telephone calls per operator in 1930 was found to have increased 48.2% over 1921. During the same period there was an 80.13% increase in the number of calls. The loss of job opportunities for operators in 1930, however, numbered 69,421 or 32.5% of the total jobs of this type available in 1921. This percentage of loss followed closely the percentage of telephones in service in 1930 that were dial-operated.

The street railway utilities, with the demand for their service declining even before the depression, have had little or no reason for increasing the size of their labor force. Bus operation and one-man trolley-cars, in addition to much abandonment of service, have also made it possible to meet normal consumer demand without increasing employment. In fact, after 1933 when telephone and electric utility employment had become stabilized, the trend in this utility was still downward.

That increases in productivity with consequent displacement of workers were important factors in accounting for the low level of utility employment during the 1930's as compared with 1929 is also shown by the experience of these utilities during the war. The three utility industries have been able to meet vastly increased demands without enlarging their necessary labor force above the 1929 level of employment, except in the case of the telephone utilities during 1943 and 1944. With respect to the electric light and power industry, Chart 7-A indicates a reduction in the size of the labor force after 1941. By 1944, the index of employment in this industry, if adjustment is made from a 1939 base to a 1929 base, was even lower than that in 1933. Nor did the street railway utilities reach 1929 levels by 1944. This situation is due partially, however, to the fact that war manpower needs prevented expansion of employment to the level of greatest operating efficiency. In addition, new construction and many peacetime services have been eliminated. Since the end of the war employment has tended to increase. The index of employment in December 1945 for the electric utility industry stood at 90.7; for the telephone industry, at 143.0; and for the street railway utilities, at 122.7

In summary, the characteristics of employment in the utility industries are: first, a high degree of stability in the length of the work week which, as has already been pointed out, is primarily due to the technological structure of these industries; secondly, a relative stability in the level of employment, as compared with manufacturing industries,

[3] U.S. Bureau of Labor Statistics, *Monthly Labor Review*, "The Dial Telephone and Unemployment," February 1932.

under the impact of minor business fluctuations. This stability has resulted from the fact that the relationship between output and the number of employees in utility industries is different from that existing in manufacturing plants. Since the output of a utility varies with the utilization of the capital equipment it is possible to absorb small increases in demand without adding to the labor force. It may also be impossible to reduce the number of employees in proportion to the decrease in demand during a period of recession or during a seasonal slack. A third characteristic is the fact that major cyclical changes do have an effect upon employment levels which may be as severe as in manufacturing industries. Unemployment in the utility industries can be large enough to create a problem. Even during the more or less normal situation in March 1940 the ratio of those seeking employment to those persons employed in the electric utility industry was 3.6%; in the street railway industry it was 3.7%; in the telephone utilities the ratio was 2.5%. A similar ratio of all-manufacturing industries was 8%.[4] Lastly, a significant characteristic of utility employment has been the material and continued increase in labor productivity due to mechanization and rationalization which, were it not for the expansion of telephone and electric service, would result in a declining employment level in those industries, as has been the case for the street railway utilities.

Commission Control

The jurisdiction of state public service commissions over wages and salaries of the utility labor forces is based upon their acknowledged right to determine the reasonableness of operating expenses. The commissions have established and maintained their right to disallow as an appropriate operating expense unreasonable wage or salary expense.[5] The direct setting of wage rates, however, is not within the province of regulatory authorities. As far as the reduction of wage expense is concerned, the power of commissions is limited. They can only utilize the indirect disallowance procedure to effect a change in the amounts to be paid to a utility company's labor force. The wage expense disallowed must also be patently unreasonable. In the few court decisions upon the issue, unreasonableness has been given a broad interpretation in favor of managerial discretion. The power of commissions to order a general increase in wages for the employees of a utility company or system has been established only tenuously, if not denied.

During and immediately following the World War in 1918, the rapidly changing price level and consequent labor force unrest was the occasion for appeals by the labor forces for appropriate commission action. The attitude of many of the regulatory agencies in connection with their power to interfere with wage rates at that time was aptly expressed by the Wisconsin Railroad Commission.

". . . wages are regulated to a large extent by the labor market. The scope of the Commission's duties lies principally between the public and the utilities, and is not concerned with the wages paid except in-so-far

[4] Sixteenth Census of the U.S.: 1940, *Population —Vol. III: The Labor Force*, "Part 1: U.S. Summary," Table 74, p. 180.

[5] *Charlesworth v Omro Electric Light Co.*, PUR 1915 B, 1 (Wis. 1915); *Re Clifton Forge Mutual Telephone Co.*, PUR 1920 C, 252 (Va. 1920); *Re Crystal City Gas Co.*, PUR 1923 B, 828 (N.Y. 1923); *Re Home Telephone Co.*, PUR 1924 A, 253 (Mo. 1924); *Re Coos and Curry Telephone Co.*, PUR 1924 E, 344 (Ore. 1924); *Public Service Commission v. Northwestern Improvement Co.*, PUR 1926 D, 305 (Mont. 1926); *Re Beckley Water Co.*, PUR 1931 B, 275 (W. Va. 1931); *Re Southern Bell Telephone & Telegraph Co.*, PUR 1933 B, 181 (S. C. 1933); *Re Detroit Edison Co.*, 16 PUR 9 (Mich. 1936).

as they may be reflected in unreasonable rates or inadequate service."[6]

The reliance upon the operation of competitive forces in setting the price of labor and the negative role implied in taking action only after service became inadequate were probably typical of the early attitude of regulatory agencies.

Even when the case involved a consumer complaint of inadequate service due to lack of efficient workers, the commission felt it had no authority to order an increase in compensation to employees.[7] And, though it held an adjustment of wages to employees to be justified, the Oregon commission refused to fix wages or reduce hours. Instead, it decided that full discretion resided within the company.[8]

During the same period discussed above, some commissions did take positive action to meet the distress occasioned by price inflation. The commissions expressed almost no opposition to rate increases where petitioned for by the utility companies in order to cover enlarged wage expenses;[9] some refused, however, to raise rates to meet contingent wage increases.[10] As far as concerns the ordering of wage adjustments, the Indiana Public Service Commission, while saying that it had no power to compel an increase, asserted that it could make such an increase a condition of a rate order. The commission validated its action by the war emergency.[11] The Nevada Public Service Commission, when faced with a situation where service had ceased because of a strike, the result of a wage-cut, decided that it had the power to adjust rates to meet the higher wage expenses the utility would incur if it returned to the original wage scale. It justified its action by the public's right to continued utility service.[12]

The state of Kansas, in its regulation of public utilities, was able to exercise the most extensive control over wages in the utility industries. The statute establishing the regulatory agency of the state, the Kansas Court of Industrial Relations, definitely gave that public body the power to regulate wages and working conditions. The statute declared:

"It is hereby declared necessary for the promotion of the general welfare that workers engaged in any of said industries, employment, public utilities or common carriers shall receive at all times a fair wage and have healthful and moral surroundings while engaged in such labor."[13]

Acting upon this authority, the Kansas Court of Industrial Relations ordered wage increases in the case of two utilities —the Topeka Edison Company[14] and the Joplin and Pittsburg Railway Company.[15] In the latter case, the regulatory agency made its point of view quite clear when the argument was advanced that the company was financially unable to meet the increased wage costs. It said:

"This court is very desirous to do nothing in this case which will unduly burden the respondent. However, it must be admitted that wages to labor should be considered before dividends to the investor, and that a business which is unable to pay a fair rate

[6] *Re Monroe County Telephone Co.*, PUR 1917 C, 507, 514 (Wis. 1917).

[7] *Roebuck v Southwestern Bell Telephone Co.*, PUR 1918 D 210 (Okla. 1918).

[8] *Re Portland Railway, Light & Power Co.*, PUR 1918 A, 751 (Ore. 1918).

[9] *Re San Francisco-Oakland Terminal Railways*, PUR 1920 A, 115 (Cal. 1920); *Re San Joaquin Light & Power Corp.*, PUR 1920 D, 940 (Cal. 1920); *Re Nuckolls County Independent Telephone Co.*, PUR 1921 C, 558 (Neb. 1921).

[10] *Re Union Gas & Electric Co.*, 8 Ill. PUCR 657 (Ill. 1921); *Re Van Brunt Street Railway & Erie Basin Railway Co.*, PUR 1919 E, 723 (N.Y. 1919).

[11] *Re Indianapolis Traction & Terminal Co.*, PUR 1919 A, 278 (Ind. 1918).

[12] *Public Service Commission of Nevada v Nevada Northern Railway Co.*, PUR 1919 F, 334 (Nev. 1919).

[13] *State of Kansas v Topeka Edison Co.*, PUR 1920 E 866, 869 (Kansas 1920).

[14] *Ibid.*

[15] *State of Kansas v Joplin & Pittsburg Railway Co.*, PUR 1920 E 825 (Kansas 1920).

of wage to its employees will eventually have to liquidate."[16]

After 1921, the price level which had fallen from its peak in mid-1920 became stabilized at a lower level. The commission cases involving earnings of the utility labor forces in this period were primarily concerned with attempts to lower wage and salary rates. Consumer attempts in 1922 to have commissions lower rates based on a reduction of allowable wage expense were rebuffed in two instances.[17] The commissions found such wage reductions would act against sound public policy. In 1926, the Montana commission, deciding that wage expense for a utility was excessive, ordered a reduction in the operating expense allowance.[18] And the West Virginia regulatory authority took similar action when it decided that the utility involved maintained an excessive and unnecessary labor force.[19] The orders, however, were not taken to a court of review. In an instance where a commission felt that wages for electric railway employees were in excess of a cost-of-living standard, it took no action, holding that it had no control over the issue.[20]

In certain cases, commission attempts to regulate wage expense have been reversed by United States district courts. In the Northwestern Bell Telephone Company case[21] the court decided that the use of studies of wages paid in other companies was not necessarily applicable to this utility company and that, unless there was definite evidence of an abuse of managerial discretion, the decision as to the number and compensation of the employees of a utility must reside with the company. The court cited the *Missouri v Southwestern Bell Telephone Company* case (262 US 276, 1923) as support for its contention that commissions may not interfere in purely managerial function. It said:

"The expenses that are questioned relate to the number of employees and to the wages and salaries paid to them. A witness of the defendants (Nebraska State Railway Commission) by means of a series of studies of the number of employees and of the amount of wages paid by some other telephone companies, as compared to the number of employees of the plaintiff and to the wages paid to them, deduces the conclusion that a large saving could be effected by the plaintiff. The evidence shows that very many differences in conditions exist between the services required of the employees of the several companies, and these differences are so great that one may not be used as a standard for the other. The officers of the company must be allowed to exercise business judgment in deciding what employees are necessary to the conduct of the business and what is a reasonable compensation for them."[22]

In the *West Palm Beach Water Co. v City of West Palm Beach* case,[23] a United States district court also refused to uphold a regulatory decision which ordered a reduction of wage operating expense because the plant was "overmanned." The court decided that unless there was evidence of bad faith or dishonesty on the part of the company there could be no interference with purely business judgments. In 1938, the Pennsylvania commission refused, in a rate case concerning the Edison Light and Power Company, to include as operating expense an increase in wages and salaries voted by the Board of Directors. On appeal to a United States district court, this action

[16] *Ibid.*, PUR 1920 E 825, 831 (Kansas 1920).

[17] *Re City of Sault Ste. Marie et al.*, PUR 1922 B, 149 (Mich. 1922); *Re United Fuel Gas Co.*, 2 W. Va. P.S.C. Decisions 28 (W. Va. 1922).

[18] *Public Service Commission v Northwestern Improvement Co.*, PUR 1926 D, 305 (Mont. 1926).

[19] *Re Beckley Water Co.*, PUR 1931 B, 275 (W. Va. 1930).

[20] *Re Georgia Power Co.*, PUR 1928 A, 830 (Ga. 1927).

[21] *Northwestern Bell Telephone Co. v. Spillman et al.*, PUR 1926 A, 330 (Neb. 1926).

[22] *Ibid.*, PUR 1926 A, 330, 335 (Neb. 1926).

[23] PUR 1930 A, 177 (Fla. 1929).

was revoked. The court held that, since there was no evidence that the wage increases were unreasonable or exorbitant, the commission was without authority to refuse to include them as part of operating expense.[24]

During the depression of the early 1930's, the South Carolina Railroad Commission, in two cases,[25] ordered a reduction in the amount of wage items in allowable operating expenses. It was almost alone, among the other commissions, in taking such action during that period. The Wisconsin Public Service Commission had taken notice of the disparity between the change in the cost-of-living and utility employees earnings in the Wisconsin Telephone Company case[26] but had taken no action to effect a reduction of wage expenses. In a rate case involving the Southern Bell Telephone and Telegraph Company,[27] the South Carolina regulatory agency ordered a 20% reduction in allowable operating expenses. It said:

". . . the evidence before this Commission shows that notwithstanding the general decline in prices and reduction in wages and salaries which has been effected in all businesses since 1929, the company had effected no reductions whatsoever in its scale of salaries or wages. The Commission finds and concludes that this action on the part of the company is unjustifiable and does not comport with public policy . . . the company's operating expenses so far as they are charged for wages and salaries should be reduced by not less than 20 per cent."[28]

The same commission took similar action in the case of the Broad River Power Company.[29] In addition to using the change in the cost-of-living as justification for its order, the commission cited the evidence of the record that these high wage rates were maintained by the company for the purpose of inducing employees to buy securities of the Associated Gas and Electric Company, which company controlled the Broad River Power Company.

Other wage expense action taken by utility commissions during the 1930's related to the increase of operating expenses resulting from a shortening of the number of hours in the work week under the National Industrial Recovery Act. In the case of the Consolidated Edison Company of New York,[30] as in other cases,[31] such wage expense enlargement was allowed.

In recent years there have been appeals by trade unions to regulatory authorities to assume jurisdiction over such issues as dismissal wages and the loss of employment opportunities resulting from technological or organizational improvements. In a case dealing with the issue of dismissal wages,[32] the commission declared it had no jurisdiction that would enable it to decide the issue; in regard to the problem of loss of employment opportunities, the commission concerned also denied it had the authority to act.[33]

One other aspect of commission control over the earnings of utility labor forces has dealt with the practice of some utilities which give reduced rates for utility service to employees. In many instances these reduced rates were granted

[24] *Edison Light & Power Co. v Driscoll*, 25 PUR 441 (Pa. 1938).

[25] *Re Southern Bell Telephone & Telegraph Co.*, PUR 1933 B, 181 (S. C. 1933); *Re Broad River Power Co.*, PUR 1933 C, 351 (S. C. 1933).

[26] *Re Wisconsin Telephone Co.*, 6 PUR 389, 442 (Wis. 1934).

[27] *Op. cit.*, PUR 1933 B, 181 (S. C. 1933).

[28] *Op. cit.*, PUR 1933 B, 181 (S. C. 1933).

[29] *Op. cit.*, PUR 1933 C, 351 (S. C. 1933).

[30] *Re Rates and Rate Structures*, 1 PUR 8 (N. Y. 1933).

[31] *Illinois Commerce Commission v Public Service Co. of Northern Illinois*, 4 PUR 1 (Ill. 1934); *Re Rochester Gas & Electric Corp.*, 4 PUR 513 (N. Y. 1933).

[32] *Re Interurban Electric Railway Co.*, 37 PUR 429 (Calif. 1940).

[33] *Re Manchester Gas Co.*, 18 PUR 481 (N. H. 1937); Re *The Brooklyn Union Gas Co.*, 48 PUR. 367 (N.Y. 1942); *Re Consolidated Edison Co. of N. Y.*, 48 PUR 13 (N.Y. 1943).

in lieu of wage increases or as part of an employee's salary. The practice has been unanimously condemned by commissions as being discriminatory and has been ordered stopped.[84]

As is indicated by the preceding analysis, utility commissions have not undertaken, on the whole, an extensive or active role in the matter of wage adustment for utility labor forces. Whatever action was taken was not the result of an established policy recognizing the relative inflexibility of utility labor force earnings but was designed, rather, to resolve isolated critical situations. The lack of statutory authorization to regulate wages has been the major obstacle. The only exception to this situation was the Kansas Court of Industrial Relations. The control of operating expenses, the existing source of commission authority, has been subject to interpretation by United States district courts. Their broad interpretation of unreasonable wage expenses in favor of managerial judgment has rendered commission control over the problem ineffective.

[84] *Re Lawrence Gas Co.*, PUR 1915 A, 814 (Mass. 1915); *City of Seymour v Seymour Electric Co.*, PUR 1918 B, 623 (Wis. 1917); *Re Fayette Light, Ice and Coal Co.*, PUR 1918 E, 414 (Mo. 1918); *Re Mission Range Power Co.*, PUR 1920 C, 56 (Mont. 1920); *Re Commonwealth Electric Co.*, 7 N. J. PUCR 509 (N.J. 1920); *Logan v Bismark Water Supply Co.*, PUR 1923 B, 450 (N.D. 1923); *Re Teton Valley Power & Milling Co.*, PUR 1932 B, 267 (Idaho 1932); *Public Utility Commission v South Canaan Telephone Co.*, 20 PUR 476 (Pa. 1937).

Reports and Comments

Population Problems in the Pacific

LAND economists as well as demographists will read with interest the warnings and prophecies contained in Warren H. Thompson's latest book on *Population and Peace in the Pacific.*[1] In a previous book entitled, *Danger Spots in World Population,* published in 1929, Dr. Thompson enumerated the following regions as danger spots: (1) the Western Pacific, (2) the Indian Ocean, and (3) Central Europe including Italy. Only a decade later, war broke out in two of these danger spots. This book was, according to the author, originally intended to be a revision of the previous book, but due to the rapidly changing conditions caused by World War II and the piling up of new material relating to the population problems in the Pacific areas, he wrote a new book although "the fundamentals of the problem discussed had not changed."

Dr. Thompson is recognized as one of the most careful and assiduous demographic experts in the United States. His main thesis in this book, it seems to me, is that differential population pressure is a cause of war; and, looking into the Pacific region, we find both the most congested countries of the world and some of the most undeveloped areas. Classifying all countries in the world in terms of population growth, Thompson distinguishes three broad classes. In the Pacific area the first group are the countries of stationary population, principally United States, Canada, Australia and New Zealand; the second group are countries of expanding population, notably Soviet Union and Japan; and the third group includes all the pre-industrial countries, particularly China and India. In the expanding countries, due to the decline of the death rate, population is increasing rapidly and will increase for some time to come, although there may be signs that the birth rate has already begun to decline. In the third group of countries, with both high death rates and birth rates, most of the people are struggling for existence and are dependent primarily upon agriculture for a livelihood. As soon as these countries have reached the stage of industrialization, with the birth rates remaining unchanged and the death rate rapidly declining, the population will increase tremendously in the next few decades. In the case of China and India, Thompson anticipates, the 400 million in each country at present may almost double.

Bearing these features in mind we can, therefore, easily see the complications of the population problem in the Pacific region. According to Thompson, those countries in the category of stationary population have, and will have no population pressure. Japan, which belongs in the second group, has already had population pressure which caused her to resort to military expansion in searching for new territory; she will feel more pressure in the near future. But the grave problem lies in China and India. By either military conquest, or political and economic domination, both of these countries have been reduced to semi-colonial or colonial status in the past and subject, therefore, to exploitation by the Western powers. Their industrial development has been thwarted by the foreign control of tariff rates. In China the control of tariffs was removed only in 1929. In both countries the national prestige has been hurt by discriminating treatment by other great powers. Migration of their nationals to the sparsely populated territories in Southeast Asia and Africa has been barred not by the indigenous peoples of those territories but by the Western colonial rulers. When these countries have once become industrialized, with their military strength increased, national feeling growing stronger, and national unity achieved, they will become two formidable great powers in Asia. The question naturally arises, will China and India remain submissive as they were or will they exercise their power to force a decision as they see fit? Japan tried to do this and

[1] University of Chicago Press, 1946.

failed. If China and India are forced to take the position of the prewar Japan in the future, there will be no peace but war, a more dreadful war in the Pacific region. This is Thompson's main apprehension.

In calculating the close connection between population pressure and war, Thompson separates carefully the felt pressure from the actual pressure of population on resources. The former is the real cause of war. Without this distinction it is difficult to meet the fact that in the past the countries with great population pressure such as China and India should have been less aggressive than Japan. No doubt that there is some justification in the distinction; but, in this writer's opinion, the facts suggest that Thompson seems to try to find a scapegoat for militarism, not only in Japan but in all aggressive nations. Take Japan for an example: It is true that, during recent years, we have heard obstreperous outcries from Tokyo that Japan suffered from unbearable population pressure and was entitled to expand her "life line" from Manchuria to China proper, later to Southeast Asia, and, finally, to the whole territory of Oceania. Thompson must have taken this propaganda as evidence that the Japanese people have felt the pressure of population on resources far more keenly than have the people of China and India.

Before we analyze this problem further, we must recognize the fact that the pressure of population on resources has remained so far largely in the domain of theory among demographic experts, and that the concept is so broad that, in the daily life of the common people, its existence is not visualized or even surmised. The Japanese peasants in general are as conservative, family-minded, docile and earthbound as are the Chinese and Indian peasants. Thompson's assumption is that the Japanese have tasted the sweets of luxury and comfort and have come to feel the pressure of population. If this has been the case, let us ask why should the Japanese peasants not practice birth control, which is the most direct, effective and feasible way to maintain a high level of living, and which has been adopted by the peoples of the West? Why did the same peasants refuse to migrate to Japanese colonies if they really felt population pressure at home? How can we explain that both the Japanese government and the people repeatedly and bitterly opposed the idea of birth control? Before and during the war, Japanese militarists were never reluctant to announce that in order to be the master of Asia the Japanese as a nation should increase its population to two hundred million inhabitants.

In this connection we should not forget that Japan has pursued for several decades an educational policy of disseminating the idea of racial supremacy, Shintoism and militarism. Through incessant propaganda, the Japanese Government has inculcated the idea that the Yamato race is too precious to be restrained from breeding and, therefore, other Asiatic races should give room to the Japanese when their lands are needed. Loyalty to the Emperor, "the Son of Heaven," was emphasized as a cardinal virtue. The Japanese Imperial Armed Force has long been regarded as undefeatable. It is not by population pressure but by acceptance of these beliefs that the peasants were transformed into selfless, fanatic and formidable warriors. (Some of these die-hards may still be hiding and fighting in the Pacific islands.)

It was only when the Japanese war machine had invaded and occupied Manchuria that Japan was condemned severely by the world's public opinion, especially after she failed, in 1931, to convince the League of Nations that Japan's might was right. Since then, the Japanese intellectuals, serving as a mouthpiece of the government, discovered that nothing but the Malthusian doctrine of population pressure could be used as a strong argument in support of military aggression. The world has, henceforth, heard the outcry.

Population pressure is a pressure which, let us reiterate, exists only in the mind of intellectuals and which cannot be realized in practical life by the common people. To the intellectuals, such a pressure has not only been felt in Japan, but also in China and India. This is shown by the writings of specialists in population problems in those countries. But the common people are ignorant of such pressure in all countries of the world—Japan or any other aggressive nation included.

Since Dr. Thompson has emphasized the differential pressure of population on resources as a cause of war, he examines carefully the natural resources available for fu-

ture development and the possible population growth of the various countries or colonies in the Pacific region. These descriptions and analyses constitute the bulk of the book. In view of the inseparable connection between peace and population problems, the author discusses two significant features, viz., the idea of the cycle of the population growth and the colonial system.

Regardless of migration, the population growth in the pre-industrial countries is the result of the narrow margin of the high birth rate in excess of the high death rate. The trend of natural increase is very slow. Then comes the industrial revolution and associated urbanization. Improvement of sanitary conditions and advance of medical science bring down the death rate. With the birth rate remaining much less affected for some time, population increases tremendously. Eventually, with the development of urban conditions and values the birth rate falls also. This decline in births is not due to "positive checks," as suggested by Malthus, but due to voluntary contraceptive practices and other controls. When both the birth and death rates reach a low level, the population increase diminishes and finally population becomes stationary.

Based upon the cyclical concept of population growth, Thompson portrays a sombre picture for the future of most of the countries in the Pacific region. Deprived of all her colonies, Japan, with meager resources at home, is facing starvation. Regarding the problems of China and India, the author's main concern is that industrialization and urbanization would not likely be rapid enough to match the increasing number of the people and, therefore, there would be little hope to raise the level of living among the bulk of population although both China and India possess considerable unused resources for future development.

It is quite clear to the present writer that, benefiting by the great advance of science in the twentieth century, China and India will doubtless bring down the death rate more rapidly than the West has done in the past. Relative to the decline of the birth rate, there are still some other factors to be taken into consideration. We are becoming aware that it is not the gigantic skyscrapers or the magnificent factories which have induced the decline in birth, but the ensuing social ideas and values sprung from the shifting of social institutions. In human life it is, after all, an idea or a value the people may place on one thing or another. Through institutional sanctions, some European peoples in the Middle Ages were willing to sacrifice everything for religion. Other peoples, for example the Chinese, feel it worthy to work hard for the welfare for their offspring. Coupled with the industrial revolution, capitalism associated with individualism became the prevailing philosophy in western Europe and America. Withdrawing from their devotion to Christianity, the peoples in the West have more and more centered their interest in self-uplift and individual enjoyment. To bear one more baby under these circumstances may mean delay in climbing the social ladder. More important, the institutional sanctions are such that parents are held responsible for the children when they are young; but, on the other hand, sons and daughters may altogether ignore their responsibility for the livelihood of their aged and helpless parents. The significance of this social setting resides in the fact that childbearing and rearing become a matter of sacrifice or altruism which has not yet been proved to be a part of human nature. Socialism may prove to be in large measure a remedy for this condition. Although the necessary statistical data are lacking, the effect of such a change in the socio-economic system upon the birth rate may be profound. Judging by the persisting high birth rate in Russia, I feel more and more skeptical that what is happening today in the Soviet Union simply repeats what happened after the industrialization and urbanization in the West. I do not argue whether this is, or is not, the case. What I wish to emphasize is the factor which has so far been largely neglected by almost all demographic specialists. Since the Russian need not worry greatly about the cost of rearing a child, which is in part provided by the government and since there are no luxuries to be bought in the market, by what evidence can we be sure that the Soviet people take the same attitude as we do toward raising children?

Industrialization in Japan has been following largely the line of western capitalism, although she preserves many features of her own. When the time is ripe for China and India to be industrialized, these two countries, with the heavy burden of popu-

lation and comparatively meager resources, may not be qualified to travel along the route which the West and Japan have travelled. Under a socialist or rather, a national planned economy, the birth rate may not decline so rapidly and drastically as has happened in the West, or even in Japan. Thus, the growth of population in the near future may reach a still larger figure than Thompson mentioned as a probability—700 million for China in 1980 and 680 million for India in 1981. However, this is only a guess, of course. Unforeseen events may arise to alter these estimates.

Now, let us turn our attention to Thompson's discussion of the colonial system in the Pacific region. It is undeniable that the colonial rulers, including Japan, have promoted the development of many of the "backward" countries or colonies. This was done, as Thompson rightly states it, for the benefit of their mother countries and not primarily for the welfare of the indigenous peoples. Under the system of colonization the native population of the islands in the Pacific Ocean, including Australia, has suffered in the past a great loss in numbers.

In all colonial countries in the Pacific region, except Australia and New Zealand, the rulers regardless of color have, though numerically a minority, acted as masters over the native and the immigrant peoples. Why have the ruling classes not settled as farmers and urban workers in those colonies? Thompson's answer is that they have a higher level of living and that "those with the higher level are always driven out in the course of time by those having the lower level." (pp. 104-105) Why have the white people who settled in Australia not been driven out by the indigenous black fellows? Thompson's argument relies apparently upon the fact that Australia was not so densely populated as the other countries before the advent of the colonial rulers and, therefore, the Australian natives were relatively smaller in number. These points deserve more discussion.

It has been a common phenomenon that the colonial system and racial supremacy always go hand in hand. When such a social cleavage exists, the colonial rulers consider themselves superior to the natives and naturally feel ashamed to take the jobs that the natives have been engaging in and to work the way that the natives have been doing. And again, since the colonies were conquered largely by military force, coupled with racial supremacy, oppression and mistreatment have created great bitterness and hostility among the native peoples. Of the colonial rulers the Japanese were efficient but extremely ruthless. Before and during the war, no Japanese in Manchuria could travel without military protection. How can we expect that the Japanese could possibly settle in great numbers in the colonies working peacefully together with the native peoples? The Japanese were forced by such circumstances to take the "sheltered" jobs and live in the large cities.

Thompson is quite right in saying "the colonial system in the East is bankrupt" (p. 309) and that "since the entire colonial system denies the right of the subject people to decide their own destiny, it has no place in a democratic future." (p. 18) He has made an elaborate and exhaustive survey of the advantages and disadvantages of the colonial system to a holding power. The conclusion he reaches is that "the citizenry of the colonial power paid a high price for the national prestige thus acquired, that the profit of the colonial enterprise did go largely to a small business and official group, while the costs of being a colonial power were paid by all the taxpayers of this power." (p. 303) In this connection, it is quite conceivable that it has long been not the fair-minded intellectuals or the common taxpayers who want to hold a colony but the "small business and official group" who, through exerting political pressure on, or holding influential positions in, the government prevent adoption of a policy abolishing the colonial system. In view of the problems in the Pacific region we believe that it is not necessarily differential population pressure but the colonial system with its discrimination and inequality of treatment that will cause war.

These are the major items so far discussed. There are still some minor points which are also worth mentioning in passing. (1) In dealing with the future of Japan, the author suggests free trade and a "just" peace for that country. In principle this leaves little room for discussion but, in reality, this is not a simple problem. He is right in saying that "it is idle to talk about freedom to buy when there is not also freedom to sell." The question is, which country is in a posi-

tion to lower its tariff rates in order to let Japan have relatively free trade in the Pacific? Japan was confronted with high tariff and quota walls when she was strong before the war; who will pay attention to the demand of free trade by a defeated and weakened Japan in future? Every country is trying to be as egoistic as it can be, but at the same time expects other countries to be altruistic. How can such a magic formula be worked out in international dealings?

(2) Regarding the economic future of Manchuria and Formosa, Thompson suggests a system of co-management of the industries and railways by Chinese and Japanese nationals, by which both nations will be benefited. This is sound in principle but this writer believes it is not feasible. China learned too well before the war that where there were Japanese traders and inhabitants there would be espionage, intrigue, smuggling, and illegal trade in arms and narcotics. After the outbreak of war, because of atrocities, oppression and mistreatment, the national feeling of bitterness against Japan has arisen so high that no owner will trust a Japanese manager or technician to work in his enterprise and no Japanese would possibly endure such a hostile situation.

(3) Furthermore, Thompson goes still further to persuade the Chinese Government to the effect that Manchuria and Formosa would better maintain close economic ties with Japan. Economically, this suggestion may deserve consideration. Politically, it seems unlikely that any independent nation could allow a part of its territory to be tied up closely to a foreign land unless forced to do so. Such economic attachment would naturally lead to a separation movement, if not occasion encroachment by the country to which it is bound economically. How should Thompson expect China to do something that no independent nation would consider?

(4) In one passage Thompson notes the attitude of the Nationalist Party of China toward industry and says: "The Kuomintang leaders would clearly prefer to follow a laissez faire policy in which the state assumed few responsibilities." This statement is so strange and unfounded that the writer doubts deeply the validity of evidence through which Thompson draws this conclusion. Of course, it is rather difficult for a Westerner to comprehend China's policy in recent years which, printed on paper, may be one thing and, in practice, another. Nevertheless, so far as the Kuomintang's policy toward economic development is concerned, from Dr. Sun Yat-sen's tenet to the present government's practice, there have never been any indications that the leaders "would clearly prefer to follow a laissez faire policy."

(5) Finally, instead of the common term of Manchuria, Thompson has adopted throughout his book the term "Manchukuo," which means the "nation of Manchus" and which was the puppet state recognized only by the Axis powers. Manchuria contains the three eastern provinces of China with an area of 380,000 square miles and "Manchukuo" contains one more province in inner Mongolia, Jehol, which is entirely different geographically and physically from Manchuria. The physical area of "Manchukuo" is about 550,000 square miles. Thompson seems to use these two terms interchangably without any realization of the political and physical divergency in content. Since so-called "Manchukuo," a term coined by the Japanese militarists, is no longer a going concern, the adoption of the geographic term, Manchuria, appears highly advisable, although the term "the Northeastern Provinces" of China would be more preferable to the Chinese.

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Interstate Differences in the Saturation of Wired Homes, Mechanical Refrigerators and Electric Ranges, and Their Causes*

AMONG the data reported by the United States Census of Housing of 1940 there are three significant indicators of the extent of electric service, namely, the saturation of wired homes, of mechanical refrigerators and of electric ranges. When the forty-eight states are compared with respect to each of these saturations, wide variations are found to exist which suggest an investigation of their possible causes.

This is done by means of scatter-diagrams in which factors thought to be of possible importance in connection with the three above indicators of electric service are correlated with them for the forty-eight states. These correlations will permit some conclusions as to the relative importance of the various factors. The measures correlated with the saturation of wired homes are the following: national income per capita, median rents per dwelling unit, and electric service rates. The saturation of mechanical refrigerators which is expressed on the basis of all homes as well as on the basis of wired homes alone is correlated with median rents, July temperatures, and the cost of operation. The saturation of electric ranges—based on wired homes—is related to median rents, the availability of gas, the cost of electric cooking, and the ratio of the cost of electric to gas cooking.

The data are mostly those of the 1940 U. S. Census of Housing. The national income figures are those of the Department of Commerce. July temperatures are from the U. S. Weather Bureau, and the costs of electric service are obtained from the Federal Power Commission's typical bill studies for Jan. 1, 1940.

Interstate variations of wired homes are strongly affected by income and rent. In the first correlation the percentage of dwelling units with electric lighting—the so-called wired homes—are tied with per capita income payments (Fig. 1). The grouping of the 48 points along the mathematically fitted exponential trend is very close. The high coefficient of correlation (94 per cent) is an indication of the strong relationship between the two measures.

The picture of the strong effect of income on wired homes is duplicated by Fig. 2, when the median rent[1] of all dwelling units, wired and unwired, is substituted for income. The coefficient of correlation is even higher, namely 96 per cent.

The similarity of the affect of the two factors, income and rent, is striking and permits the conclusion that rent is a good substitute for income, at least in interstate comparisons. To substantiate this conclusion rent and incomes are correlated in Fig. 3. There is a close relationship and the coefficient of correlation is 94 per cent. The trend is linear and indicates near proportionality between the two measures. This is at variance with the rent-income relationships as known from the expenditure studies of the Department of Labor. In these studies the families are arranged by income groups and it has been established that rent as a percentage of income declines with increasing incomes. However, when dealing with average rents of large aggregations of people such as states or cities, this relationship no longer obtains. Here the proportion of income paid for rent remains nearly the same for high as well as for low incomes. In fact, in the low-income states the proportion paid for rent is somewhat smaller than in the high income states. The explanation lies in the fact that the low income states are mostly southern states where houses do not require a heating plant; construction is less substantial and land is cheaper.

Having demonstrated the substitutability of rent for income in interstate comparisons, we can return to Fig. 2. The strong barrier against expansion of electric service can be better visualized in terms of rent than of annual per capita incomes. A median rent of $10 per month means that

* Grateful acknowledgment is made by the author to Professor H. B. Dorau and Dr. J. R. Foster of New York University who have permitted him to use certain material (Figs. 1, 2, 6, 7, and 9) from a larger unpublished study on the residential market for electricity.

[1] The census shows imputed rent for owned homes.

half of the families pay rents of less than $10 per month. Such rents obviously cannot support the necessary investment in electric wiring, no matter how cheaply done, nor can it be expected that people living in such low-cost quarters can afford the necessary minimum investment in electric appliances and the minimum charge for electric service, no matter how low they are.

There were in 1940 eleven states—mostly southern—with median rents below $10. For all of those the saturation of wired homes is less than 55 per cent. In Tennessee, for instance, in spite of its low-cost electric service, a low median rent of $7.7 per month holds wired homes at 50 per cent.

The correlation of Fig. 2 includes all homes: urban, rural non-farm, and rural farm homes. When the correlation between median rents and wired homes is shown for rural farm homes alone (Fig. 4), the pattern remains the same. There is a greater scatter of the points and the coefficient of correlation is somewhat lower, namely 88 per cent. This good result is surprising in view of the fact that in the case of rural farm homes the distance from transmission lines becomes an important factor in their electrification.[2] It can be observed from the correlation that half of the states have median rents of less than $8. In all of these states the saturation of wired homes is less than 35 per cent.

Effect of electric rates on wired homes in forty-eight states is negligible. In contrast to the strong relationship between income or rent and wired homes, rates for electric service do not show any correlation with homes, as seen from Fig. 5. The price of electric service is represented by the typical monthly bill for 40 Kwhrs.

The same negative result is obtained when the bills for 40 Kwhrs are correlated with the deviations of per cent wired homes from the trend in Fig. 2, which is the correlation between median rents and wired homes. By this procedure the effect of rents on wired homes is eliminated and when the residuals are correlated with electric rates any relationship existing should appear. But the scatter of the points in this

[2] It should be mentioned that wired homes include also those which have their own power supply and are not connected to any power lines. Their number is not very large.

FIG. 1
PERCENTAGE OF ALL HOMES WIRED AND ANNUAL INCOME PER CAPITA

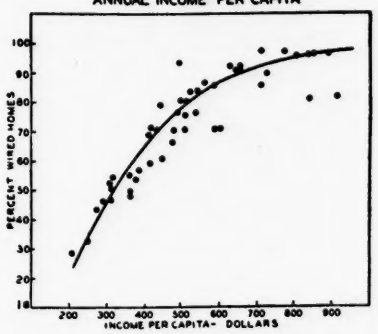


FIG. 2
PERCENTAGE OF ALL HOMES WIRED AND MEDIAN MONTHLY RENT OF ALL HOMES

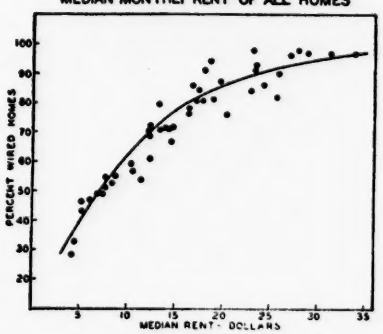


FIG. 3
ANNUAL INCOME PER CAPITA AND MEDIAN MONTHLY RENT

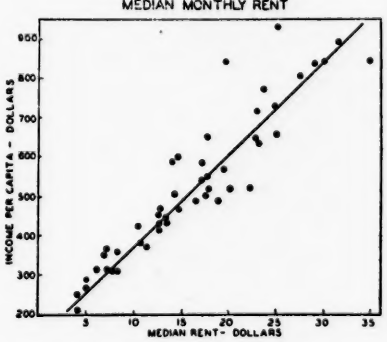


FIG. 4
PERCENTAGE OF RURAL FARM HOMES WIRED AND MEDIAN MONTHLY RENT OF ALL R.F. HOMES

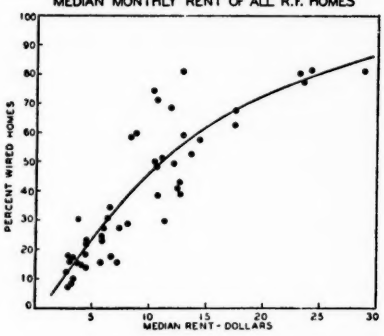


FIG. 5
PERCENTAGE OF ALL HOMES WIRED AND MONTHLY BILL FOR 40 KWHRS

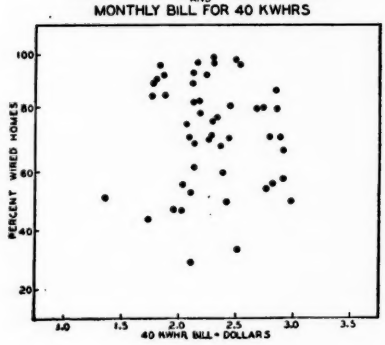
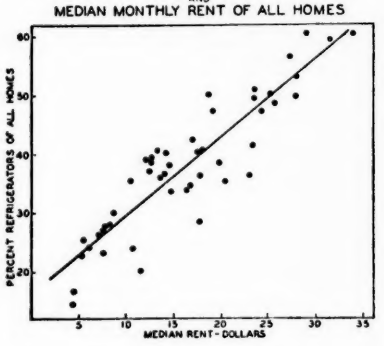


FIG. 6
REFRIGERATOR SATURATION OF ALL HOMES AND MEDIAN MONTHLY RENT OF ALL HOMES



correlation—not shown here—is similar to that of Fig. 5 and there is no tendency for any grouping along a trend. The conclusion can be drawn that the effect of rates on wired homes must be a negligible factor in interstate differences of wired homes.

Refrigerator saturation of all homes (wired and unwired) in forty-eight states is strongly governed by rent and to a lesser degree by July temperatures. Mechanical refrigerators in per cent of all occupied dwelling units are correlated with median rents in Fig. 6. It should be noted that mechanical refrigerators include, besides electric, also gas refrigerators. The national ratio of electric to gas boxes is about ten to one. The trend in Fig. 6 is a straight line and the relationship is very strong as indicated by the high coefficient of correlation of 92 per cent.

When mean July temperatures are paired with refrigerator saturation of all homes—a correlation not shown here—no correlation results. Only after the dwelling units renting below $15 per month are eliminated and the percentage of refrigerators in homes renting above $15 are related to July temperatures does a fair degree of correlation result (Fig. 7). The coefficient of correlation is 53 per cent. The necessity for eliminating homes renting below $15, before a correlation is achieved, indicates that the effect of climate on refrigerator saturation of all homes (wired and unwired) is subordinate to that of rents.

Refrigerator saturation of wired homes in the forty-eight states is affected both by rent and July temperatures. The situation becomes different when refrigerator saturation is based on wired homes instead of on all homes. Fig. 8 and Fig. 9 show the two relationships of median rents of wired homes and mean July temperature with refrigerator saturation of wired homes. The correlations are of similar character, with a fairly large scatter. The coefficients of correlation are 44 and 30 per cent respectively, indicating a somewhat larger effect of rents on refrigerator saturation of wired homes.

The reason for the comparatively low correlation in these two figures is the fact that the low income states are precisely the ones with high temperatures. Thus the two factors counteract each other for a number of states, precluding a better group-

ing in these two correlations. In order to overcome this difficulty the two factors have to be combined into one measure. For this purpose the forty-eight values for each of the two factors are expressed as percentages of their respective averages. After some experimentation it was found that satisfactory results could be obtained by giving the two factors equal weight in the combination. This meant that the per cent deviations from average were enlarged for temperatures to meet the range of rent deviations which is three times as large. The pattern of the correlation of the combined rent-temperature measure with refrigerator saturation of wired homes, as shown in Fig. 10, is much clearer than that for either factor alone. The coefficient of correlation is increased to 60 per cent. The combination of the two factors, rent and July temperature, must be accorded a large share of the responsibility for interstate differences of refrigerator saturation of wired homes.

The effect of rates on interstate variations of refrigerator saturation of wired homes is negligible. In Fig. 11 the operating cost for electric refrigeration is correlated with refrigerator saturation of wired homes. As the operating cost is taken the readily available typical bill for the incremental amount of 40-100 Kwhr, which even though it represents an overstatement of the energy use of an electric refrigerator under 1940 conditions, will do for the purpose of comparing the states. The correlation is inconclusive.

When, in order to eliminate the combined rent-temperature effect, the cost of electric refrigeration is correlated with the deviations of refrigerator saturations from the trend of Fig. 10, which ties the refrigerator saturation of wired homes with the combined rent-temperature measure, a correlation results—not shown here—which is equally inconclusive. The scatter is as large as in Fig. 11 and no tendency for any grouping of the points around a trend is visible. The conclusion may be drawn that the effect of the operating cost for electric refrigeration on interstate variations of refrigerator saturation must be negligible.

Interstate differences in electric range saturation of wired homes are not affected by rents, but are affected by availability of gas. The correlation between median

FIG. 7
REFRIGERATOR SATURATION OF HOMES RENTING AT $15 OR MORE AND MEAN JULY TEMPERATURE

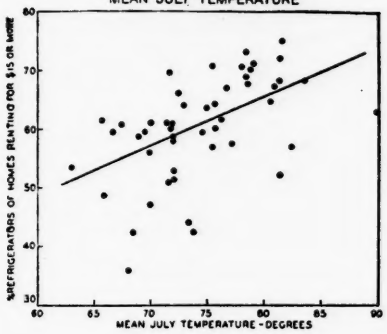


FIG. 8
REFRIGERATOR SATURATION OF WIRED HOMES AND MEDIAN MONTHLY RENT OF WIRED HOMES

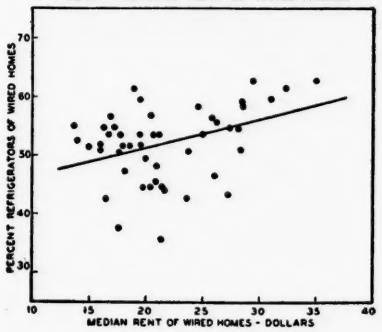


FIG. 9
REFRIGERATOR SATURATION OF WIRED HOMES AND MEAN JULY TEMPERATURE

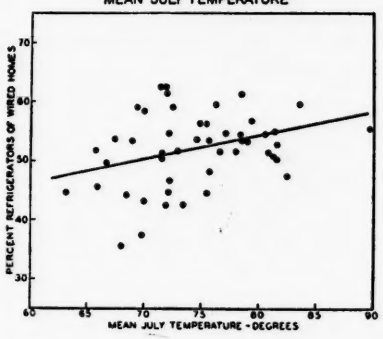


FIG. 10
REFRIGERATOR SATURATION OF WIRED HOMES AND COMBINATION OF RENT AND TEMPERATURE

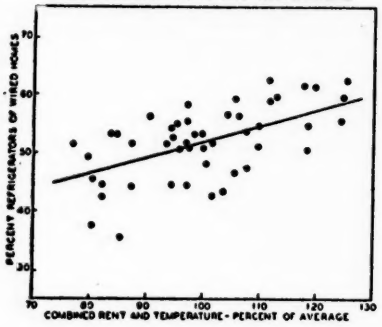


FIG. 11
REFRIGERATOR SATURATION OF WIRED HOMES AND MONTHLY COST OF REFRIGERATION

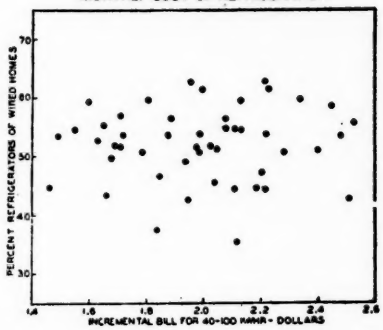
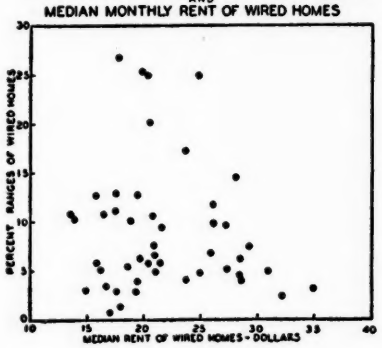


FIG. 12
ELECTRIC RANGE SATURATION OF WIRED HOMES AND MEDIAN MONTHLY RENT OF WIRED HOMES



monthly rent of wired homes and electric range saturation of wired homes (Fig. 12), shows no signs of any grouping around a trend which would point towards a relationship between the two variables. We may conclude that differences in rent levels do not contribute to an explanation of the differences in electric range saturations of wired homes in the forty-eight states.

However, when the availability of gas is correlated with electric range saturation of wired homes (Fig. 13), a clear pattern with a distinct trend results. Availability of gas is defined as the ratio of homes with gas service (including bottled gas) to those with electric service. It can be assumed that all homes with gas service also have electric service. The trend of Fig. 13 is a curve which slopes down to the right of the chart and flattens out as it approaches the X-axis. The coefficient of correlation is 78 per cent, indicating the importance of this influence on interstate variations of electric range saturation.

Differences in the price of electric cooking do not show any effect on interstate variations of electric range saturation, but the ratio of electric to gas cooking price does. In Fig. 14 the price of electric cooking, as represented by the incremental bill for 100-250 Kw hrs, is paired with electric range saturation of wired homes. The correlation is inconclusive. The differences in the cost of electric cooking in the forty-eight states do not seem to have any visible effect on the differences in electric range saturation.

The situation changes, however, when the ratio of the cost of electric to gas cooking is used, whereby the cost of gas cooking is represented by the typical bill for 10 therms as reported by the Federal Power Commission. This correlation (Fig. 15) shows a distinct pattern. A curve has been fitted which approaches the Y and X-axis asymptotically. The coefficient of correlation is 84 per cent. There is some scatter near the center part of the curve but the upper and lower ends of the curve are of greater importance. It can be observed that seven of the states with range saturations above 15 per cent show ratios of electric to gas cooking costs of less than 1.6, while the four states with range saturations below 4 per cent have ratios above four to one.

Additional factors such as availability

and price of competitive fuels other than gas and promotional policies have effect on electric range saturation, but cannot be analyzed statistically. In addition to the influence of availability of gas and the relative cost of electric and gas cooking, other factors and conditions need to be considered in a comparison of electric range saturation in the forty-eight states. In connection with the ratio of electric to gas cooking price it should be remembered that a large proportion of electric ranges are found in electric service areas outside of gas mains. There, no competition between electric and gas cooking exists. The competition is rather between electricity and oil, bottled gas, coal and wood. In order to get a complete picture the relative costs of cooking with electricity and these other fuels would also have to be analyzed in their effect on interstate variations of electric range saturations. However, state-wide representative costs of cooking with oil, bottled gas, coal and wood are not available at this time, preventing statistical analysis of these additional factors.

Another important element which should be given attention in interstate comparisons of electric range saturations is the difference in promotional effort directed towards expansion of the electric cooking load. For obvious reasons this factor is not open to statistical investigation.

Review of Results and Some Remarks about Interstate Comparisons.

Reviewing the results of the study, one of the outstanding features is the strong effect of difference in income or rent levels on interstate variations of wired home saturation. So strong are the relationships that one can almost call income the exclusive determinant of the extent of wired homes in the forty-eight states. Even for rural homes where the factor of distance from transmission lines is present the relationship remains strong. In contrast, electric service rates seem to have no influence on wired home saturation of the states.

Income or rent is of equally strong influence on refrigerator saturation of all homes, wired and unwired, in the forty-eight states; and the effect of climate remains in the background. Only when low rent homes of less than $15 rent are eliminated do July temperatures show some

FIG.13
ELECTRIC RANGE SATURATION OF WIRED HOMES AND AVAILABILITY OF GAS

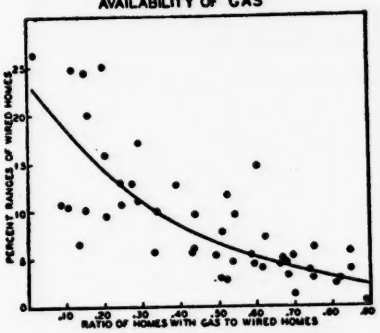


FIG.14
ELECTRIC RANGE SATURATION OF WIRED HOMES AND MONTHLY COST OF ELECTRIC COOKING

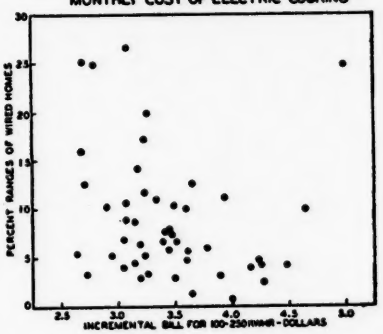
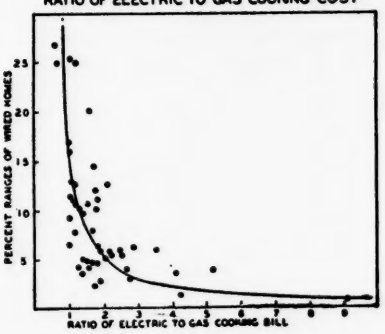


FIG.15
ELECTRIC RANGE SATURATION OF WIRED HOMES AND RATIO OF ELECTRIC TO GAS COOKING COST



effect. When refrigerator saturation is based on wired homes only, rents and July temperatures share in the effect on interstate difference of saturations. When the two factors are combined a good correlation with refrigerator saturation results indicating that together they represent a major influence. On the other hand, differences in the operating cost of electric refrigeration do not seem to have any bearing on differences in refrigerator saturation among the forty-eight states.

The income factor, it is found, is of no importance when electric range saturation is compared between the states. It is the availability of gas, defined as the ratio of gas to electric customers, which assumes great importance in explaining interstate differences in electric range saturation. While the price of electric cooking in itself seems to have only negligible influence, the price ratio of electric to gas cooking has an effect to be reckoned with in interstate variations of electric range saturation. There are other factors, such as availability and price of competitive fuels other than gas and the promotional effort, which are known to be of importance in connection with the extent of electric cooking. However, investigation of their effect is not possible because of lack of statistics.

The factors discussed in this study, because its scope is limited to only three aspects of the domestic electric market (wired homes, mechanical refrigerators, and electric ranges), represent only one sector of the complex array of forces active in this market. Studies of a different kind such as intercity comparisons on a nationwide basis or inter-community comparisons within a company's territory are needed to bring out some of the other factors. However, interstate comparisons as carried through here emphasize certain features of the market for domestic electric service, such as the strong dependence of wired homes and refrigerators on incomes or the effect of availability of gas on electric range saturation, which cannot be brought out as clearly in any of the other comparisons. Thus interstate comparisons have their definite place in the large field of analysis of the market for domestic electricity.

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Public Utility Financing in the Third Quarter of 1946

THE total public utility offerings of $523 millions during the third quarter of 1946 represented a decrease of $116 millions over the total for the second quarter. Over three-fourths of the issues offered during the third quarter were offered in July.

Public utility long-term debt issues sold publicly are shown in Table I. The thirteen issues listed total $349 millions. The largest issue was the $125 million American Telephone and Telegraph Company 2⅝'s of 1986 which was offered in July at 100.85% of par to yield 2.59%. The second and third largest issues respectively were the $77.5 million Columbia Gas and Electric Company's 3⅛'s of 1971 offered in September at 100% of par to yield 3.13% and the $45 million Gatineau Power Company 3's of 1970 offered in July at 104.37% of par to yield 2.75%.

The $6.2 million Rochester Telephone Corporation 2½'s of 1981 offered in July at 101.17% of par had the lowest offering yield of 2.45%. The $125 million American Telephone and Telegraph Company 2⅝'s of 1986 and the $9 million Yonkers Electric Light and Power Company 2⅝'s of 1976 both had offering yields of 2.59%. The American Telephone and Telegraph Company 2⅝'s of 1986 had the lowest net cost to company of 2.62% after allowance for underwriters' commissions and estimated incidental expenses.

The weighted average offering yield on publicly offered issues was 2.77%. The range of the underwriters' spread was from .48% for the American Telephone and Telegraph Company 2⅝'s of 1986 to 1.18% for the Portland Gas and Coke Company 3⅛'s of 1976. The weighted average of the underwriters' commissions was .70%

TABLE I—SUMMARY AND ANALYSIS OF PUBLIC UTILITY LONG-TERM DEBT ISSUES OFFERED PUBLICLY, THIRD QUARTER, 1946

Company and Issue (A)	Coupon Rate (B)	Principal Amount (C)	Maturity Date (D)	Month of Offering (E)	Offering Price (F)	Offering Yield (G)	Underwriters' Commissions (H)	Proceeds to Company (I)	Estimated Incidental Expenses (J)	Net Proceeds (K)	Cost to Company (L)
	%	$			%	%	%	%	%	%	%
American Telephone & Telegraph Co. Debentures	2⅝	125,000,000	1986	July	100.85	2.59	.48	100.37	.28	100.09	2.62
Brooklyn Union Gas Co. General Mortgage	2⅞	34,000,000	1976	July	103.00	2.72	.72	102.28	.98	101.30	2.81
California Electric Power Co. First Mortgage	3	16,000,000	1976	July	104.50	2.78	.78	103.72	.46	103.26	2.84
Gatineau Power Co. First Mortgage	3	45,000,000	1970	July	104.37	2.75	.69	103.68	.33	103.35	2.80
Gatineau Power Co. Debentures	2¾	9,500,000	1961	July	101.23	2.65	.59	100.64	.33	100.31	2.73
Missouri Power & Light Co. First Mortgage	2¾	7,500,000	1976	July	102.06	2.65	.50	101.56	1.39	100.17	2.74
Portland Gas & Coke Co. First Mortgage	3⅛	10,000,000	1976	July	101.46	3.05	1.18	100.28	.95	99.33	3.16
Rochester Telephone Corp. First Mortgage	2½	6,238,000	1981	July	101.17	2.45	[1]	[1]	[1]	[1]	[1]
York County Gas Co. First Mortgage	3¼	1,600,000	1976	July	101.92	3.15	[1]	[1]	[1]	[1]	[1]
Eastern Gas & Water Investment Co. Secured	4	254,000	1976	August	100.00	4.00	[1]	[1]	[1]	[1]	[1]
Yonkers Electric Light & Power Co. Debentures	2⅝	9,000,000	1976	August	100.75	2.59	[1]	[1]	[1]	[1]	[1]
Columbia Gas & Electric Corp. Debentures	3⅛	77,500,000	1971	Sept.	100.00	3.13	1.00	99.00	.40	98.60	3.20
Tampa Electric Co. First Mortgage	2⅝	7,500,000	1976	Sept.	99.48	2.65	[1]	[1]	[1]	[1]	[1]
Total or Weighted Average	.....	349,092,000	.....	.....	101.52	2.77	.70[2]	100.90[2]	.45[2]	99.69[2]	2.84[2]

[1] Information not available

[2] Exclusive of issues for which information is not available.

TABLE II—SUMMARY AND ANALYSIS OF PUBLIC UTILITY LONG-TERM DEBT ISSUE OFFERED PRIVATELY, THIRD QUARTER, 1946

Company and Issue (A)	Coupon Rate (B)	Principal Amount (C)	Maturity Date (D)	Monthly Offering (E)	Offering Price (F)	Offering Yield (G)
	%	$			%	%
El Paso Natural Gas Co. First Mortgage	3	36,000,000	1966	July	102.00	2.87
Iowa Electric Light & Power Co. First Mortgage	3	15,000,000	[1]	July	104.97	[1]
Kansas-Nebraska Nat. Gas Co., Inc. First Mortgage	3⅜	1,100,000	1965	July	108.20	2.81
Rockland Gas Co., Inc. First Mortgage	3⅛	382,000	1963	July	[1]	[1]
Brockton (Mass.) Gas Light Co. Registered Notes	3¼	705,000	1956	August	[1]	[1]
Derby Gas & Electric Corp. Debentures	2¾	2,450,000	1956	August	101.50	2.58
Derby Gas & Electric Corp. Debentures	2¾	500,000	1956	August	102.375	2.47
Southwestern Public Service Co. First Mortgage	2⅞	20,000,000	1971	August	102.25	2.75
Arkansas Western Gas Co. First Mortgage	3	1,500,000	1966	September	[1]	[1]
Continental Telephone Co. Debentures	3½	4,800,000	1971	September	[1]	[1]
Total or Weighted Average		82,437,000			102.74[2]	2.81[2]

[1] Information not available

[2] Exclusive of issues for which information is not available

TABLE III—SUMMARY AND ANALYSIS OF PUBLIC UTILITY PREFERRED STOCK ISSUES OFFERED, THIRD QUARTER, 1946

Company and Issue (A)	Dividend (B)	Principal Amount (C)	Monthly Offering (D)	Offering Price (E)	Offering Yield (F)
	%	$		$	%
Black Hills Power & Light Co. (Par $100)	4.20	1,350,000	July	110.00	3.82
El Paso Natural Gas (Par $100)	4.10	7,500,000	July	109.00	3.76
Missouri Power & Light Co. (Par $100)	3.90	4,000,000	July	104.00	3.75
Newport Electric Corporation (Par $100)	3.75	773,200	July	102.50	3.66
Southern California Water Co. (Par $25)	4.00	800,000	July	26.66	15.00
Northern State Power Co. (No Par)	3.60	28,256,250	August	102.75	3.50
Otter Tail Power Co. (No Par)	3.60	5,955,000	August	99.25	3.63
Total or Weighted Average		48,634,450			3.77

TABLE IV—ISSUES OF PUBLIC UTILITY COMMON STOCK OFFERED DURING THIRD QUARTER 1946

Company (A)	Principal Amount (B)	Month of Offering (C)	Offering Price (D)
	$		$
Black Hills Power & Light Co.—(Par $1)	315,000	July	21.00
Central Ohio Light & Power Co.—(Par $10)	975,000	July	32.50
El Paso Natural Gas Co.—(Par $3)	4,202,394	July	42.00
Southern New England Telephone Co.—(Par $100)	12,000,000	July	120.00
Derby Gas & Electric Corp.—(No Par)	399,694	August	23.00
Iowa Public Service Co.—(Par $15)	871,614	August	19.50
Otter Tail Power Co.—(Par $10)	2,624,820	August	51.25
Arkansas Western Gas Co.—(Par $5)	1,284,663	September	13.75
Central Louisiana Electric Co., Inc.—(Par $10)	570,000	September	28.50
TOTAL	$ 23,243,185		

which is only .01% above the weighted average for the second quarter. The weighted average cost to the company was 2.84% which is a marked increase over the 2.33% weighted average of the second quarter of 1946.

A summary and analysis of public utility long-term debt issues offered privately during the third quarter of 1946 is shown in Table II. There were ten issues totaling $82.4 millions offered privately during the third quarter. The two largest issues offered privately were the $36 million El Paso Natural Gas Company 3's of 1966 offered in July at 102.00% of par to yield 2.87% and the $20 million Southwestern Public Service Company 2⅞'s of 1971 offered in August at 102.25% of par to yield 2.75%.

The public utility preferred stock offered during the third quarter is listed in Table III. There were seven issues offered totaling $48.6 millions with a weighted average offering yield of 3.77%. The $28.2 million Northern States Power Company offered at 102.75% of par was the largest issue during the quarter.

A listing of the public utility common stock offered during the third quarter of 1946 is given in Table IV. Nine issues totaling $23.2 millions were offered during the third quarter. The third quarter total represents a decrease from the $40 million

total for the second quarter. The $12 million Southern New England Telephone Company par $100 offered in July at $120.00 was the largest issue.

Only one issue of serial debentures was offered during the third quarter. The $20 million Columbia Gas and Electric Corporation 1⅞'s of 1947-56 were offered to yield 1.20 to 2.25%. This issue was offered in September.

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Wisconsin Telephone Company

Book Reviews

The Wildcatters: An Informal History of Oil Hunting in America. By Samuel W. Tait, Jr. Princeton: Princeton University Press, 1946. pp. 218. $3.00.

When Colonel Drake struck oil at Titusville in 1859 he led the way to a new source of quick wealth. Today, the very word *petroleum* suggests giant corporations that control everything from the search for the liquid mineral to its ultimate delivery to the consumer, but behind this modern corporate façade is the fascinating and romantic story of oil-finding that began in western Pennsylvania and before long had reached both the Gulf and Pacific coasts and had spotted many areas in between. Always in the vanguard of this search has been the "wildcatter," and wildcatters very properly are the principal characters in this interesting account of oil-finding in America.

There has been little rhyme or reason in the changing pattern of petroleum discovery. Therefore, Mr. Tate's "informal history" of oil-hunting could not follow any exact chronological sequence or orderly geographic progression. The story of the Drake well is followed by a picturesque account of the early development of the oil industry around Oil City and elsewhere in western Pennsylvania. These were the formative days of the industry. The western Pennsylvania fields were the training grounds from which were to come the men who carried the business of oil-finding far and wide.

Organizing his book chiefly around the lives of the most famous wildcatters, the author surveys in successive chapters the early beginnings of the petroleum industry in various other parts of the country; the transition from salt wells to oil wells in West Virginia; the Bradford Pool, including its modern revival through water-flooding; doodlebugs vs. geologists in oil-finding; the development of oil fields in the limestones of Ohio and Indiana; the early days of oil-finding in Kansas, Indian Territory, Texas, and California; the development of Spindletop and other Gulf Coast salt-dome fields; the opening of additional pools in the mid-continent region of Oklahoma, Kansas, and Texas; the discovery here and there over the country of "fields that couldn't be there" since they defied the evidence of geology; the drama of the oil towns; operations in Wyoming and Montana; the further development of the California fields with their huge wells; and, finally, the opening of an important oil field in the long-passed-over structural basin of southern Illinois.

Unfortunately, the wildcatter seems to have fared little better than the prospector. Rarely has he received the financial returns that his risk-taking role would appear to justify. But perhaps merely finding the oil has been adequate reward. The average wildcatter, Mr. Tate points out, has been loath to settle down as a producer; instead, he has always been eager to risk his earnings in a new search elsewhere.

The Wildcatters will make an especially strong appeal to those who have worked or lived in the oil fields. The book is well and interestingly written, and the author shows a nice appreciation of the many ridiculous and humorous aspects of the scramble for oil. Several maps are introduced but it could be wished that they were more numerous and in greater detail. Sixteen pages of excellent photographs, including some remarkable ones of the early days of the oil industry in Pennsylvania, add much to the attractiveness of the book.

Is the day of the wildcatter over? Apparently not. Not only is he still with us but he may even be destined to regain some of his former importance. The author points out that there are some types of oil accumulation which defy the known methods of detection from the surface and that, if the time ever comes when only such occurrences remain, the wildcatter, or at least the tradition of the wildcatter, may again be predominant in oil-hunting.

RAYMOND E. MURPHY
Clark University.

Land Title Origins: A Tale of Force and Fraud. By Alfred N. Chandler. New York: Robert Schalkenbach Foundation, 1945. p. xvi, 550. $3.00.

The full title of this book is an accurate summary of its contents. Its 550 pages are packed with the recital of a myriad of points in the early history of land tenure in the United States which illustrate the degree to which titles to land were originally established in an atmosphere of intrigue and plunder.

Ninety percent of *Land Title Origins* is organized into a series of chapters each of which deals with the early history of land tenure in some state or region: "Virginia," "Connecticut," "The Delaware Region," "The Carolinas," "Pennsylvania," "The Trans-Appalachian Region," "Texas," and "The Oregon Country" are examples of chapter headings.

The other ten percent of the space in the book is comprised of general introductory chapters on the exploration of and migration to the New World. In these chapters the central thesis is that land hunger was a dominant reason for the Atlantic migration. The flight from feudalism, the author maintains, has not been sufficiently emphasized as compared to religious liberty and other profferred explanations.

On the whole, Mr. Chandler's book must be regarded as a valuable and important contribution to the land economists' library. It is full of factual items, many of which make interesting and exciting reading, and these are so arranged as to be easily found for reference purposes. Teachers will find the book useful as a source of historical incidents, which can well serve to illustrate many points in land economics. Research workers will use it as a reference on historical points.

The book is less than wholly satisfactory on one point. This deficiency is directly related to the abundance of the materials which Mr. Chandler has unearthed. One has the feeling that the author had so many reference cards and so many notes on them that he hardly had time to do more than to sort them geographically and chronologically and then to copy them into a continuous manuscript. Consequently, the book is poorly structured for reading.

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The French Railroads and the State. By Kimon A. Doukas. Studies in History, Economics and Public Law, edited by the Faculty of Political Science Number 517, New York: Columbia University Press, 1945. pp. 287. $3.50.

Dr. Doukas has assigned to himself the difficult task of describing the relationship of the French railroads and the government from the time of the enactment of the law of 1840 guaranteeing interest payments to the shareholders of the Paris-Orleans line to the elaborate law of 1937 providing for unification of operation and virtual nationalization of all French railroads. This task required not only a summary of the mass of legislation and administrative orders dealing with railroad construction, finance, labor, and management but also involved a critical understanding of the economic crises and political controversies which affected so vitally the history of the French railroads. The author has admirably fulfilled the first requirement. Furthermore, he has given adequate attention to the political and economic background although not as much as this reviewer would have liked. A more detailed exploration of the political milieu would have brightened what at times becomes a bare record of legislation and tables; but even more important it would have illumined more clearly the complex array of external factors shaping the development of the French railroads.

The first of six subdivisions of approximately equal length describes the organization and construction of the six main networks. Certain characteristic features emerge by 1887: the principle of regional monopoly as opposed to free unrestricted competition between independent networks; the intrusion of defense and employment considerations in determining the location of routes and the extent of construction; the beginnings of a state-operated sys-

tem; and the recurrent financial crises, not to mention the violent upheavals which set the stage for major reorganizations, and established the unwholesome practice of having the treasury guarantee a minimum-maximum interest-dividend.

In his discussion of the prosperous years between 1887 and 1914, Dr. Doukas considers the status of railroad labor and its successful drive to secure social legislation. President Truman's threat to use the army to run the trains and to draft railroad labor had many parallels in the repressive measures taken by the French government to break the strike of 1910.

The French railway system proved adequate to meet the heavy demands of the War Office between 1914 and 1919. But soaring operating costs accompanied by heavy property losses led to mounting deficits. The reorganization act of 1921 emerged from the variety of plans debated in the House of Deputies. The purpose was twofold: to liquidate the accumulated arrears of debt and to provide for a balance of revenue and expenditure. A "fonds commum" was set up from which needy roads could borrow. But the plan of 1921, like the recapture clause of Esch-Cummins Act, did not work well. Public funds were needed to make up the deficits until the late twenties. Moreover, political considerations prevented the automatic adjustment of rates which it had been hoped would eliminate the necessity of public subsidies.

The decade following 1929 proved as disastrous for French railroads as for American companies. While tonnage declined in volume, operating costs rose largely because of higher labor costs. Motor transport grew rapidly. The guarantee of deficits by the state encouraged directors to declare handsome, if unearned dividends. By 1937 the five remaining private networks faced receivership.

In 1937 the Minister of Public Works was authorized to sign an agreement with the management of the seven networks for their unification. Both the assets and the liabilities of the networks were transferred to the National Company of French Railroads. The 49-percent interest in the total capitalization which the shareholders of the five private companies were to receive was to be amortized by the payment of six-percent interest until December 31, 1982. The act provided for a board of management with representatives of the government, private networks, labor, and the public. Of course the act of 1937 never received a fair trial.

Dr. Doukas has not hesitated to point out the bad features of French regulation of railroads. He is, however, quite willing to defend the monopolistic structure and operation as well as the general effectiveness of the French railway system.

In a book which makes frequent reference to places and regions is it too much to expect the inclusion of a map?

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Breaking the Building Blockade. By Robert Lasch. Chicago: The University of Chicago Press, 1946. 316 pp. $3.00.

Breaking the Building Blockade is *not* an academic book and it presents no new material for those at all familiar with housing problems. The author is neither houser, planner nor land economist. He is a highly intelligent journalist with a deep interest in social problems and an ability to digest the relevant material of a particular professional field and to present a dispassionate, overall approach to its problems. In this instance he is concerned with why there are insufficient houses in livable communities at a price people can afford to pay.

Lasch considers the current housing problem one of vast complexity caused by many factors, each requiring a variety of solutions. Fundamentally it is a matter of reducing costs, of raising or altering the distribution of family incomes, or, of providing housing at less than cost.

He proves painstakingly that no one quick remedy will work. There is need for a crusade on many fronts and the section, "Bringing Down Costs," indicates particularly how many-faceted any campaign must be. In the case of cost-reduction alone there are such problems as modernizing building codes, preventing restrictive practices, reducing mortgage interest rates, property tax reform, mass purchasing of basic materials,

stabilizing, on a year-around basis, of the construction industry, and the myriad methods and potentialities of pre- and site fabrication. Yet even if *all* of these problems were resolved it would actually "surmount only one barrier to good housing and the reconstruction of our cities."

The problem of shelter no longer is individual but is one for society. The author asks if there is any more reason why men should not improve the quality of housing by cooperating in local groups and through the instrumentalities of government at all levels than they have done to improve the quality of education; or of streets and sidewalks, fire protection, waste disposal and the other essential services?

Lasch proposes that we "broaden the range of family incomes which can afford good housing, supplement those incomes which cannot, and rebuild our cities by plan instead of by chance." A permanent National Housing Agency as part of the federal cabinet, unceasing war for cost reduction, provision for low-rent housing and for urban redevelopment, all within a planning framework, are the desiderata. More concretely, he wants 15 million homes annually for the first ten postwar years, rental housing in the amounts needed and at under $20, $30 and $40 a month, a 5-room house (including cost of land) at less than $3,000, and the rebuilding in self-contained communities of reclaimed slum land. These proposals are of course similar to the Wagner-Ellender-Taft legislation still under Congressional consideration, though the latter is not as far-reaching.

The book, a discriminating consensus of the best thinking on these problems, is primarily for the uninformed but alert layman. Even if he has no previous background it will enable him to understand why there is a housing crisis and how it can be licked. It will be useful also to the more technical individual who wants the facts and arguments nicely lined up in one package. Lasch is "the Stuart Chase of housing" in this instance and, like the master popularizer, has uncanny ability in knowing not only how to pick brains but which brains to pick. Planning and housing can use more popular books of this calibre.

RITA DAVIDSON

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History of Legislation and Policy Formation of the Central Valley Project. By Mary Montgomery and Marion Clawson. Berkeley, California: United States Department of Agriculture, pp. 276.

This publication traces the development of basic legislative and administrative policies for conservation and utilization of water resources of the Central Valley of California, i.e., the combined Sacramento and San Joaquin River valleys of that state. The complex and controversial problems requiring policy determination, the parts they played in the development of alternative programs and policies by the federal and state governments as well as by private interests, are given detailed and well documented treatment. In addition, copies of documents especially pertinent to the subject are supplied in a twenty-two page appendix; for those wishing to make a further study of the Central Valley Project, an exhaustive bibliography on the subject is also supplied.

The authors sketch the historical facts of private and public water planning and utilization in the Central Valley prior to 1932, essential to an understanding of the problems and conflicts of interests which today complicate the effective operation of the Central Valley Project. Brief mention is also made of the historical development of certain concepts of California's legal philosophy relating to limitations on extent of landholdings and reparian rights to underground water.

Discussion of the more recent development of problems and conflicts creating the need for policy determinations is begun with a summary of the provisions of the Central Valley Project Act of 1933.

Following passage of the Central Valley Project Act, the main efforts of state officials and private interests were directed toward obtaining substantial federal aid in financing the project. These efforts, plus the positive program of the Interior Department in expanding its activities, resulted in the Bureau of Reclamation taking over the Central Valley Project in 1935. Thereafter, certain limitations on state financing contained in the California Central Valley

Project Act made exclusive federal financing and control inevitable.

Construction and operation of the Central Valley Project by the Bureau of Reclamation must be carried out under the terms of the federal reclamation laws; the legal requirements pertaining to average limitations, repayment, and distribution of power are especially significant.

At the same time, the Central Valley Project is unique as a reclamation project in the sense that it is not primarily a project for reclaiming arid wastes for cultivation but one of reclaiming a rich agricultural region, developed by private initiative, from impending ruin threatened by exhaustion of the underground water supply. In addition, ownership of large tracts of land, frequently by corporations, is characteristic of the area.

The public power question and related policies are complicated by the fact that the Central Valley is predominantly supplied with electrical energy by a long-established private utility company which has engaged in extensive hydro-electric generation of power.

These complex and controversial problems of formulating policies for the administration of the Central Valley Project have been given scholarly and, with one exception, highly impartial treatment by Miss Montgomery and Mr. Clawson. Only in their discussion of the public power question have the authors deviated slightly from their high standards of objective discussion of the subject.

HERBERT F. KLINGMAN

University of Wisconsin

An Outline for Industry. By Frederic Willkie and Harrison C. Blankmeyer. Springfield, Illinois: Charles C. Thomas. pp. 212. app. 35. $4.50.

The title of this book may indicate that it contains a generalized plan for expansion of an industry or for a corporation within an industry. Strictly speaking, it is neither. Rather it is a careful study of an approach that industry in general or a business enterprise in particular should take, especially in the postwar period. The liquor industry is selected largely because of the apparent familiarity of its two authors with a corporation which has long been prominent in the field and to the employees of which the book is dedicated, Joseph E. Seagram and Sons. The authors point out that the liquor industry, because of the eighteenth amendment, was forced to become "A Rip Van Winkle among its fellows," but that the more progressive elements in the industry did not lie dormant. Systematic and well planned contributions in the fields of engineering, physical science and business administration are illustrated. Here and there one gets the idea that the authors are severely criticizing the New Deal administration, and still there are many very pointed remarks that are even more sarcastically critical of the extreme conservatism on the part of business management. The spirit of free enterprise runs in a very prominent manner throughout the whole book, but this time-worn phrase is not blindly held out as something to be worshipped without making at least a reasonable contribution. Frequently the authors come close to stating that many who extol the virtue of freedom of enterprise desire an absence of restrictions only on their endeavor to monopolize the particular branch of industry in which they operate. The following quotation seems to summarize their point of view: "The Senate and the House of Representatives of the United States exhibit a surprising lack of initiative in promoting national research projects. It is small wonder that the administration has been branded as 'leftist' and 'radical' because it has perforce taken upon itself the responsibility of experimentation in political economy, labor relations and international trade promotion which Congress itself should have been first to espouse."

While the authors emphasize very sharply the need for research along both physical and social lines, education and research are not free from criticism. Specifically, education is criticized in that there is not sufficient relationship of the work of the chemists, engineers, bacteriologists, physicists and the like to the civilization in which the development takes place. Research is criticized as being aimless and misdirected all too often. Their main suggestion is that research of all sorts should be administered by the use of more job analysis and time budget pro-

cedures. The book could be summarized, as far as its basic philosophy is concerned, by stating that in the postwar world the emphasis should be on more "know why" instead of "know how," in spite of the fact that the latter will be given the credit for having won the war. There is an urgent plea especially for understanding on the part of one branch of our economy by the other and supposedly cooperating groups. The attempt on the part of both labor and management to have laws entered on the statute books during the past decade to give one control over the other is summarized in the two following sentences: "Labor expected a biased referee and found instead a headsman. Management expected an executioner and found instead a bungler." In conclusion, the authors apparently feel that the term "free enterprise" should have emphasis placed very strongly on the latter word and a more whole-hearted interpretation of the former.

E. A. GAUMNITZ

University of Wisconsin

New City Patterns: The Analysis of and a Technique for Urban Reintegration. By S. E. Sanders, and A. J. Rabuck. New York: Reinhold Publishing Co., 1946. pp. 205. $8.

The authors are engineers in the city planning research unit of Public Buildings Administration, Federal Works Agency. They are troubled that "many people have the mistaken idea that the rehabilitation of slum and blighted areas is simply a housebuilding process . . . Public works will form the foundation and determine the speed and direction of urban growth and reconstruction."

They are on the side of the angels in preaching that the metropolitan area is the logical local planning unit, in blueprinting the edifice of a metropolitan planning commission and in arguing that urban reintegration must be based on sound planning objectives. But, with their major premise, it somehow turns out that the attack is primarily through major highway systems, off-street parking in neighborhood shopping centers, mass transportation and traffic safety. There are full-page illustrations of writhing loops of complicated clover-leaf intersections, the general plan of the Highway System for New York and Its Environs (1935) and a Proposed Trunk Line Railroad System for New York and its Environs (undated), the reproduction of which at this late date can only embarrass its original sponsors because it has long since been discarded.

The list of functions of a metropolitan planning commission is straight out of Bassett: it begins with streets, public utilities, sites for public buildings, parks. Item 6 is a land-use plan; item 8 is a population density and distribution plan. There seems no recognition of the approach developed four years ago in *Action for Cities* which seeks to put the engineering elements so stressed by the authors in their proper place in an integrated synthesis of demographic, economic, social, engineering, administrative, and fiscal considerations.

Their presentation leads to the conclusion that federal aid is needed for urban redevelopment. They propose as one aid mortgage insurance to assist private enterprise; they make no mention of yield insurance, nor indeed of the proposals of the Wagner-Ellender-Taft bill at all.

Their housing economics is based upon filtration downward as the desirable or inevitable process; their urban sociology includes: "delinquency, vice and low forms of amusement too often appeal to, rather than offend" some tenants in blighted areas and slums.

What is sad about this elaborate and expensive book is that two able men, with long experience, in charge of city planning research in one federal agency seem so completely out of touch with equally able and experienced urbanists in other federal agencies, their thinking and their proposals. Last year the Civil Aeronautics Authority put out suggestions for city planning that would have produced a pattern of Class 1-5 airports with interstices in which people might live and work. I suppose I am indulging in the dream that there might again be a National Resources Planning Board, in which all these able men might work cooperatively, instead of (as it almost seems) competitively.

This book was delayed over nine months by production problems. I wish I could

say that the delay had led to their solution. I regret to report that the photo-offset printing is so inferior that the illustrations are reduced to a uniform gray and many of the small-scale plans are rendered almost illegible.

CHARLES S. ASCHER

New York

Price and Related Controls in the United States. By Seymour E. Harris. New York: McGraw-Hill Book Co., 1945. p. 384.

Rent has been an economic price of especial interest to the land economist. Harris, in his chapter "The Ceiling on Rents, a Successful Freeze," has analyzed the characteristics of rent which differentiate it to a degree from other types of prices. He makes clear that rent control was more successful than other types of price control for reasons inherent in the nature of rent itself.

Rented building space of each type is a reasonably homogeneous product. The past rentals of any property are easily ascertainable. Rent constitutes an important part of a renter's total expenditures. Public opinion was strongly in favor of rent control. For all these reasons, the OPA had a greater measure of cooperation from the public in the case of rent control than it did in any other price field.

It would be unjust to the book, however, to over-emphasize its analysis of the rent problem. It analyzes the underlying principles of price control, the extent to which the objectives sought were attained, the different methods of restraining price inflation which were tried out, the degree of success of the price control program as a whole and commodity areas in particular, and also the interaction of price controls, wage controls, and the rationing of commodity supplies.

In a final section, entitled "The Future of Controls," Dr. Harris described the control policies and methods which he believed should be used during the period of reconversion. It is of interest to compare the actual price control procedures used by the government during 1946 with the system of controls advocated by Harris. The differences are significant.

DON D. LESCOHIER

University of Wisconsin

Seasonal Farm Labor in the United States. By Harry Schwartz. New York: Columbia University Press, 1945. pp. 172. $2.25.

Seasonal Farm Labor in the United States by Harry Schwartz (1) is a very worthwhile contribution to the literature of agricultural economics because (2) every possible contribution to the analysis of farm labor is welcome. (3) Farm labor is a field that has been neglected by labor economists and by agricultural economists with the result that discussions of farm labor have tended to be either reformist or studies of farm labor have been in other terms than "farm laborers." (4) The author brings together in one place a review of all studies which have been made in the field.

The author found it impossible to deal with the numerous sporadic data in much of any additive fashion because practically all studies of seasonal farm laborers and farm labor have been made in only crucial periods, each made on a different basis and most of them made at hit-and-miss spots. About the only across-the-board comparative analysis he was able to make was a comparison of farm wage rates with industrial wage rates and a comparison of farm wages with farm income.

The author states in the preface that he originally intended to treat the seasonal labor force of each agricultural industry in detail but because of his entrance into the armed forces he was compelled to deal with only two major types—fruits and vegetables and sugar beets.

The book is presented in 5 chapters and two appendices, Chapter 1, "Seasonal Farm Laborers," Chapter 2, "Fruit and Vegetable Workers," Chapter 3, "The Economics of Fruit and Vegetable Labor," Chapter 4, "Workers in Sugar Beets," Chapter 5, "Seasonal Farm Labor in the Postwar Era." Appendix A consists of a table showing the hourly wage rates of farm and factory workers, 1910-43. Appendix B presents a "typi-

cal modern beet workers' contract." An exhaustive bibliography is also presented.

One cannot read the descriptions and analyses presented in this book without becoming highly aware of the fact that the seasonal farm laborer is the marginal man in the whole labor force of the nation. During periods of labor surplus, seasonal laborers flowing in from numerous geographic areas compete with each other on the spot for the jobs available. During periods of labor shortage they compete with local seasonal laborers from nearby urban areas. When the labor supply is exceedingly short as it was during both the first and second world wars, they are compelled to compete with imported foreign workers. In all of these cases they are competing at the lower margin of employment opportunities.

The author presents a detailed account of all attempts at unionization, the story of all strikes—most of them abortive—and shows that organized labor techniques by means of which industrial laborers have improved their lot, have not been available to farm laborers and that there is especially great difficulty in making them available to seasonal farm laborers: furthermore, that farm laborers and therefore seasonal farm laborers, are exempted from the application of practically all provisions of minimum wage laws, workmen's compensation, unemployment compensation and other welfare laws; the only exemption being the minimum wage provisions of the Sugar Act.

In his final chapter he attempts to appraise the causes for the unfortunate position in which seasonal farm laborers find themselves, and previews the postwar future. His conclusions are that "the most important influence on future demand for seasonal farm workers seems likely to come from recent and future efforts aimed at accomplishing mechanically a task which has in the past required seasonal hand workers" and "as in the past the chief postwar hope for farm workers must rest on the maintenance of non-farm prosperity and of opportunities of escape from farm agricultural employment." He does not expect that the gains of the war period in terms of either wages or working and living conditions will be maintained unless growers find it difficult to obtain ample or more than ample seasonal farm laborers.

CARL C. TAYLOR

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Food for the World. Edited by Theodore W. Schultz. University of Chicago Press, 1945. pp. xiv, 353. $3.75.

This volume is based upon meetings held in 1944. It was published in 1945. This review will appear in 1946. The reasons for the extended period between the origin of the material and this review are deserving of explanation. They are: (1) Delays in printing, perhaps. (2) Shortage of paper, probably. (3) Dilatoriness on the part of the reviewer, certainly.

Here are the published proceedings of the Twentieth Institute of the Norman Wait Harris Memorial Foundation held at the University of Chicago, September 4-8, 1944. The Foundation is devoted to promoting a better understanding on the part of American citizens of other peoples of the world with a view to the establishment of a broader basis for improved international relations. The theme of these meetings was food in its international setting. The treatment of this theme called forth the efforts of authorities in the fields of population trends, nutrition, food supplies, and international relation.

The list of authorities is imposing. Twenty-three contributed papers; the indications are that as many more scholars and students participated in panel discussions. Since the publication is largely the result of a symposium, it is not feasible within the limits of a review to attempt to indicate, much less interpret, conclusions. The purpose of the publication is not so much that of attempting to furnish all the answers as it is to bring out in bold relief the many issues and angles which must be considered in attempting to improve the diets of goodly portions of the world's population. Some of the many complexities involved may be illustrated by a few simple observations.

Nations exhibiting the largest rate of population growth often display a slow rate of technological improvement in food production. The nutritionist possesses far more knowledge on the requirements of an adequate diet than the economist or the social planner can apply. It is one thing to blueprint the nutritional needs of a Chinese coolie, let us say, but it is quite a different matter to set up the economic and legislative machinery for providing these requirements.

Most of us will agree that the resources of the world are sufficient to produce enough food to provide an adequate diet for a larger population. But the efficient use of these resources to that end requires far freer movements in international trade than the world has yet known. How to get this freer movement is not clear. It is a sad commentary on human ingenuity when some countries such as the United States face the possibility of curtailing food production, while at the same time millions upon millions of people at home and abroad suffer from under-nourishment.

The separate papers and the discussions pertaining to them serve a threefold purpose. They (1) trace evolutionary developments in the fields of population growth, nutritional findings, progress in agricultural production and international trade policies, which developments may point to future trends; (2) supply a fairly accurate picture of food economies practiced during the world's first totalitarian war; and (3) cast some considerable light upon needed national and international policies designed to provide more and better food for more people. The reviewer holds that more and better food for more people is a must in any workable plan for a lasting peace.

ASHER HOBSON
University of Wisconsin.

The World's Hunger. By Frank A. Pearson and Floyd D. Harper. Ithaca: Cornell University Press, 1945. pp. 90. $1.50.

The authors attempt to appraise widely divergent views on the basis of scanty information (Preface). After this warning many tables are presented with no caution as to their relative reliability. The per capita consumption of all foods varies from a low of 543 pounds dry basis for Asia to a high of 587 pounds for Europe (Table 8). Of this total 97 per cent is plant food in Asia while 83 per cent is plant food in Europe. Oceania with 64 per cent plant food and North America with 75 per cent plant food are the highest users of animal foods (Table 9). These data indicate a surprisingly uniform total per capita of food which seems in conflict with much recent food analysis. On page 68 the authors say that grain production per capita is a more satisfactory basis for testing density of population. In Table 22 they show that Asia produces 592 pounds of grain per capita compared to 1,859 in North America. From this they conclude that the world's population on a North American grain consumption basis should be 902 million with only 368 million in Asia compared to its reported 2,170 million with 1,154 million in Asia who are "on an uneven standard of living." (p.68) A world population on the Asia grain consumption basis would be 2,831 million of which 577 million could be in North America. This suggests some great differences in the food-population ration as contrasted to the data in Table 8.

The authors lean on cost of living studies to defend their analysis (p.13) yet admit that "only rarely are farm families included" in such studies. This throws another element of uncertainty into their conclusions since Asia is not typically a continent of skilled and white-collared workers (whose cost of living is used).

The authors state that "the world would like to increase its consumption of animal foods" (p.17) and that few have any "comprehension of the amount of land and human effort required to produce . . . these highly prized foods" (p.17).

They stress the limitations to expansion of crop lands of the earth where soil, water, and temperature are combined in the proper proportions for plant growth. However, their data do not include grazing lands and apparently omit hay lands. This is a serious gap in any analysis of land-food relationships, although they do say "man lives largely on grass" (p.59).

The World's Hunger is an interesting summary of selected data as bearing upon

world problems. Regardless of its shortcomings its conclusions deserve attention. "Immigration will continue to be restricted —there will be insufficient controls to prevent population from expanding. In that event Europe will be the real danger spot in the world" (p.70).

RAYMOND T. BURDICK

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Agriculture in an Unstable Economy. By Theodore W. Schultz (Research Study of the Committee for Economic Development). New York and London: McGraw-Hill, 1945. pp. 272. $2.75.

This book is full of provocative ideas. It is speculative in the best sense of the word. Economic analysis and arguments are sketched with disciplined imagination. The past is viewed with an eye on the future, and agriculture with an eye on the national economy.

The focus is not the problems of individual farmers or regions within agriculture, but problems arising from the dependence of farm welfare upon the economy as a whole. "This study is devoted to these *between* problems, to the functions of agriculture in the political economy and to the effects of non-farm activities upon agriculture. Its main purpose is to lay the foundations for a national policy with regard to agriculture."

Part I, "Prospective Conditions Affecting Agriculture," is a brief resume of the war's impact on agriculture. Some prewar maladjustments, such as farm labor surplus and excessive farm indebtedness, have been partially rectified, others have been carried forward into the postwar era. For instance, the war has not improved the basically distorted price and production conditions of the cotton economy, nor has it removed the underlying factors responsible for unduly low levels of farm incomes and extreme fluctuations in farm prices. Part I closes with the central theme of the book: "Diagnosis points to . . . a bad case of excess resources in agriculture. To put it simply, this means that the expenditure of human effort in agriculture has earned too little relative to what human effort earns in other parts of the economy. This is the real disparity" (p.43). The reviewer believes this is putting it far too simply. The author's preoccupation with this theme has blocked him from inquiring more closely into the existence of "excess resources" in other lines of production (e.g., the distributive trades), and into a bad case of arrested development in effective food demand and distribution. The traditional concept of "over-supply" of food might, upon closer scrutiny, turn out to represent a case of "under-demand" for food.

Part II, "Fundamentals of the Agricultural Problem in an Expanding and Fluctuating Economy," provides cogent though highly selective arguments for the proposition that the root of the agricultural problem lies in excess resources in agriculture. In the analysis of the "Unequal Growth of the Supply and Demand for Farm Products," the causes for a declining rate of expansion of food demand, and for an increasing rate of expansion of food supply relative to demand, are portrayed vividly and perhaps somewhat too cursorily. After all, large sectors of industry are faced with limited markets relative to their potential production capacity. Might it not be that "excess resources" (with respect to current effective demand) in agriculture tend to remain employed despite the resulting low prices and earning, while "excess resources" in industry remain idle, and only the employed part of these resources continue to earn near-equilibrium returns? The fact that the increase in industrial output during the war was substantially greater than the increase in agricultural output (after allowing for relevant shifts in the labor force) suggest a need for re-examining our ideas about the relative position of agriculture and industry with respect to harboring excess resources.

In the eyes of the reviewer, the central proposition that "the primary adjustment that is necessary to approach an equilibrium involves the migration of many people out of agriculture into other fields of endeavor," and "a national agricultural policy, therefore, should have as its primary goal the attainment of a better equilibrium in the distribution of the labor force" (p.88), is

much too unequivocal and needs to be surrounded by several crucial provisos. Just as agriculture should not be made the dumping ground for city unemployed, cities should not be made the dumping ground for farm under-employed. Since it is not the primary task of agricultural policy to expand industrial employment opportunities, agricultural policy can hardly have the transfer of labor from farm to nonfarm employment as its "primary goal."

It is quite possible that for many years to come actual or potential supply will outrun effective demand in the industrial market as well as in the agricultural field, and that the primary goal of national policy should be the expansion of over-all effective demand, the stimulation of consumption especially of the necessities of life. The author, to be sure, recognizes the need for policies designed to expand demand and stimulate consumption; but in this book their importance is unduly relegated to a back-seat position.

Part III, "Governmental Programs and Controls," presents a statesman-like solution to the apparent paradox of private enterprise and public control. "What we have experienced in agriculture suggests that vigorous, enterprising farms and equally vigorous, well-designed governmental programs may be highly complementary. One may be a condition necessary to the other" (p.164). The author proceeds to evaluate the experiences under several farm programs during the depression and the war. The scrutiny of the merits and demerits, of intent and effect, of production controls, commodity loans, and wartime price regulations is extremely judicious and reveals great insight into the economic and administrative problems involved in these farm programs. In view of the author's interest in resource allocation, it is strange that the FSA is not included in the scrutiny.

Part IV, "Problems in Agricultural Policy," is the last and most involved section of the book, but also the most important one. Some duplication with Part II might have been avoided; some technical problems (e.g., concerning the proposal for a system of compensatory payments) are developed in detail beyond the scope of the book, while other problems (e.g., subsidization of production or consumption) are sketched in bare contours; and the internal organization of this part is rather helter-skelter. Still, it is a most impressive and provocative statement of the crucial policy issues in agriculture, and the suggestions for meeting those issues are refreshingly straight-forward, well-grounded in the principles and facts outlined in the preceding sections, and on the whole within the realm of administrative—though perhaps not political—feasibility.

As to the *chronic under-employment of farm labor,* the solution, according to the author, lies in (1) expansion of non-agricultural industries, (2) more leisure on farms, (3) governmental machinery for inducing a transfer of labor out of agriculture by means of a national service for locating nonfarm employment opportunities and by grants and aids to cover part of the migration expenses, and (4) "public investments in farm people, particularly the young," by means of better education, medical services, nutrition, and housing. (Of these measures, only the third is a specific for farm under-employment. The other three are equally important for nonfarm workers.)

Instability of farm income could be reduced by (1) improvements in farm technology that mitigate yield fluctuations (e.g., drought and disease-resistant plants and animals, insecticides, timing of field operations, etc.), (2) crop insurance and grain storage, (3) stabilizing industrial economy at full employment (first line of defense), and (4) "compensatory payments to farmers when business becomes depressed and unemployment spreads" (second line of defense). This last proposal is developed in considerable detail. It represents an intermittent farm price support program, which becomes operative as soon as industrial unemployment (or some other index for "depression") reaches a certain level and is suspended when full employment is again achieved, and which lets market prices seek their own level but compensates farmers by direct cash payments for all or part of the difference between the "pre-depression" and the current market price of farm products at the farm level.

Farm production adjustments should be induced primarily by (1) an appropriate price policy, and should be supplemented by (2) soil conservation programs, (3) storage programs for grains and cotton,

(4) enlarging small family farms, (5) assisting farmers to improve their farming practices, and (6) improving farm tenure. Except for price policy, to which the last chapter of the book is devoted, none of these production adjustment measures are discussed in detail.

Price policy is viewed as the keystone of agricultural policy. "We must make prices, namely, the relative prices of both factors and products, the keystone of agricultural policy" (p. 242). (1) Stabilization of the general price level at full employment is of extreme importance to farmers; this is the primary objective of monetary-fiscal policy. (2) The divergency between domestic and world market prices of farm products should be reduced, and if possible eliminated; this divergence is particularly dangerous with respect to cotton. (3) Forward prices should become a permanent and central part of a long-range national farm policy. "The fundamental principle that should guide the formulation and administration of forward prices in agriculture is this: Price changes that keep farm production in line with demand should be maximized; price changes that do not contribute to production adjustments . . . but contribute to price uncertainty in farming should be minimized" (p.265). The support price program to which the government is committed during the immediate postwar needs, and which the author criticizes severely, should be converted to a program of forward prices designed to meet the fundamental principle just outlined.

There are many statements and arguments with which the reviewer takes issue. He does not even accept, without important reservations, the two basic themes that the main root of the agricultural problem is excess resources, and that prices must be made the keystone of agricultural policy. But he acknowledges the great enjoyment and stimulation he has received from this remarkable book, and he is confident no other reader could easily escape similar effects. It should be widely read and vigorously discussed, within and outside the profession.

RAINER SCHICKELE

Department of Agriculture, Washington, D. C.

Canadian Agricultural Policy: The Historical Pattern. By Vernon C. Fowke. The University of Toronto Press. 1946. pp. 304. $3.50.

This book is a most welcome addition to an increasing volume of literature on Canadian economic and historical subjects. The author, associate professor at the University of Saskatchewan, has devoted years of painstaking study to the agricultural and settlement policies of governments in territory now included in the Dominion of Canada. While primarily a discussion of policies the events giving rise to such policies are reviewed in considerable detail.

Divided into two parts, the first (the pre-Confederation period) is divided into (1) the historical role of Canadian agriculture, (2) the French regime, (3) the Maritimes before Confederation, (4) the St. Lawrence region, 1760-1850, and (5) the agricultural frontier and Confederation. The second also contains five sections; (1) the division of powers at Confederation, (2) the encouragement of immigration and settlement, (3) the livestock and dairy industries, (4) the production and marketing of wheat, and (5) Canadian tariff policy and the farmer.

Pointing out that assistance to agriculture has consistently been recognized as a function of government at all times, Professor Fowke develops the thesis that this assistance has been given not because of any inherent need or value in agriculture itself, much less the dominance of agriculture in either Colonial or Canadian economy, but for what agriculture might contribute to Empire, and later to national development. Thus agriculture was fostered in Colonial times because it supplied provisions for the fur trade, the Atlantic coast fisheries, the lumbering industry, and trade with the West Indies. Similarly, farmers could be used as arms-bearers in defence against the Indians, and in conflict for territorial expansion. In later years investment opportunity and the development of commerce and industry in the St. Lawrence region, and subsequently in Western Canada, provided the justification for a

great variety of policies designed to assist agriculture. "Government assistance has been typically extended to agriculture because of what agriculture was expected to do for other dominant economic interests in return for assistance, rather than for what such assistance might do for agriculture" (p. 272).

Referring to the influence of farmers on policy determination, the author in a concluding chapter states: "Agriculture organization and the pressures of organized farm groups have been, at least until recently, of negligible importance in shaping the agricultural policy of the Canadian government. Canadian farmers have generally been powerless to secure assistance on their own initiative."

Still more challenging is the following from the same chapter, "Canadian agricultural policy has ordinarily been designed to encourage uneconomic uses of the factors of production. It has been designed to put people on the land, or to retain those already there, when comparative economic opportunities would have drawn them elsewhere."

In laying the background for these conclusions Professor Fowke traces agricultural development from the application of mercantile doctrine in the early French regime to the dominance of wheat in the national economy of the period from 1900 to 1930. He describes the seignorial system in effect until the British conquest and later. He enumerates the various forms of assistance—the bonuses for land clearing and for the production of hemp, hay, grain, and livestock—that have been given. He traces settlement and tenure policies and reviews in considerable detail the development of agricultural services from the establishment of agricultural societies in the late 18th century to the creation of our modern departments and colleges of agriculture.

Professor Fowke's views on the role of agriculture in Colonial and national development may not go unchallenged. He has given us a conception of agriculture that differs a good deal from that traditionally and popularly held. His conclusions are likely to be the subject of considerable debate. Be that as it may, there probably will be few who will not agree that the author has contributed an intensely interesting, well written, and carefully documented account of Canadian agricultural history.

J. F. Booth

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Problems of a Resort Community. By Millard C. Faught. New York: Columbia University Press, 1945. pp. 190. $2.75.

Miami: Economic Pattern of a Resort Area. By Reinhold P. Wolff. Coral Gables: University of Miami Press, 1945. pp. 172. $2.50.

As recreation becomes big business, as whole states look to vacationing as a restorative of favorable trade balances, the resort community deserves more analysis than it has received. I once called attention in these pages to a pioneer study, rich in material on land economics *(Martha's Vineyard, The Story of a Summer Resort,* 1835-1935, by Henry B. Hough, Edgartown, Mass.: 1936). Perhaps because that book was written by a journalist who loved his island, it was a rich picture of social transitions and culture conflicts as well.

The study of the Town of Falmouth (six miles across Nantucket Sound from Martha's Vineyard) is written by a professional economist, but one with a keen interest in human beings and having a racy style. Like Hough, he sees social and economic problems as part of one tangled skein. Thus the conflict of townsfolk and summer residents is the central theme: the introduction into a community with decadent local industry—fishing, fertilizer, brick-making—of discordantly higher luxury-living standards by people not able or willing to take part in community life. The owners of summer homes bear proportionately higher assessments, pay three-quarters of the taxes, but are not resident voters and feel put upon. Yet the townspeople feel a frantic urgency, expressed in their motto, "We have only three months a year in which to make our living."

(It was an uncanny experience to read Faught's book on the train en route to Martha's Vineyard and to have the ticket agent on the steamboat pier at Wood's

Hole—part of the Town of Falmouth—pop that sentence at me with my ticket and my change.)

Faught has gone to local and state offices for his data on income and expenditure of government and the like. In addition, he induced 100 summer residents, both owners and renters, 70 Falmouth High School students, and businessmen and hotel operators to answer elaborate questionnaires which provided fruitful information on both economic and social problems. Faught did not reach one other important element in the life of Falmouth, the casual visitor, whether weekend tripper or fortnightly vacationist.

Faught covers the gamut of government, business enterprise, marketing, land economics, and social problems with verve, shrewdness, and a good sense of interrelations.

Wolff's resort has an unusual past. Miami was a barren, uninhabited sand strip until both "natives" and resort visitors discovered it at about the same time. His study is more rigorously concerned with economics. He attempts to picture a balance of imports and exports by allocating to Dade County national data, sometimes on a necessarily artificial basis. He seeks hopefully for a diversification of income base, stressing such possibilities as international aviation and manufacture of consumer goods. Chapter VI, "Real Estate," is of most interest to us. Wolff emphasizes that most visitors to Miami are not rich and that future in-migrants will not be richer. He goes so far as a professor at Coral Gables can safely go in deprecating real estate speculation and in warning against the evils of a boom. On the other hand, he reflects the spirit of Dade County by forecasting a rate of population growth for 1940-50 projecting the rate of 1935-40 as a practically straight line.

Faught and Wolff have added significant monographs to the slim literature of a fascinating area of American life.

CHARLES S. ASCHER

New York.

Postscripts

Planning Notes

Research on Metropolitan Problems. The Institute of Human Adjustment of the University of Michigan announces the establishment of a Social Science Research Project in conjunction with the Metropolitan Community Seminar and the Flint, Michigan metropolitan community. The work of both the resident research staff and that of the graduate students is under the supervision of the Metropolitan Community Seminar, an inter-departmental graduate research seminar the faculty of which includes representatives from architecture, economics, geography, political science, public administration, and sociology. The project will spend twenty thousand dollars a year on research in metropolitan problems in the Flint area. Its program calls for a permanent fulltime research staff, with headquarters in the area, and the creation of six or seven $1,000 fellowships which allow additional allotments for travel. Doctor A. H. Hawley, of the University of Michigan, is chairman of the Metropolitan Community Seminar and of the Social Science Research Project.

On the National Level. The formation of a Land and Public Services Branch in the National Housing Agency is of interest to *Journal* readers. This Branch is responsible for the development of programs and policies to assist local public and private agencies in the acquisition of sufficient suitable land for the emergency program. It seeks "to aid in planning for the provision of adequate utilities, community facilities, and municipal services for housing, and for the formulation of policies to minimize the effects of rising land costs on the emergency program." It will propose appropriate standards of urban land use, site planning, and public services performance; prepare materials for use by communities in applying such standards, and encourage the adherence of housing developments to sound community plans. Each regional office of the National Housing Agency will have on its staff a Land and Public Service Specialist to advise local agencies and communities on these subjects. The director of the newly formed Branch is Frank W. Herring, formerly executive secretary of the American Public Works Association and associate director of the National Resources Planning Board.

Books for War Devastated Libraries

During the war, the libraries of half the world were destroyed. Where they were spared physical damage they were impoverished by isolation. There is an urgent need for the printed materials which are basic to the reconstruction of devastated areas. The American Book Center for War Devastated Libraries, Inc., has come into being to meet this need. This organization is now collecting and is shipping abroad scholarly books and periodicals which will be useful in research and helpful in the physical, economic, social, and industrial rehabilitation and reconstruction of Europe and the Far East.

What is Needed. Shipping facilities are at a premium and all materials must be carefully selected. Emphasis is placed upon publications issued during the past decade, upon scholarly books which are important contributions to their fields, upon periodicals (even incomplete volumes) of significance, upon fiction and non-fiction of distinction. All subjects—history, the social sciences, music, fine arts, literature, and especially the sciences and technologies—are wanted. Only carefully selected federal and local documents are needed and donors are requested to write directly to the Center with regard to specific documents.

How to Ship. All shipments should be sent prepaid via the cheapest means of transportation to the American Book Center, care The Library of Congress, Washington 25, D. C. Although the Center hopes that donors will assume the costs of transportation of their materials to Washington, when this is not possible reimbursement will be made upon notification by card or letter of the amount due. The Center cannot accept material which is sent collect.

Coming in this Journal in February

On Land Tenure Policy in England. F. J. Osborn, whose name appears as Advisory Editor of a new volume on *Planning and Reconstruction,* will describe the present land tenure policy in England in the February issue of this *Journal.*

On Land Tenure in South America. David Weeks, of the Giannini Foundation of Agricultural Economics at Berkeley, California, and who has returned from a year with the government of Bolivia, is writing a series of articles which will appear in this *Journal.* Their titles are: "European Antecedents of Land Tenure and Agrarian Organization in Hispanic America," The Agrarian System of the Spanish-American Colonies," and "Land Tenure in Bolivia."

"Another Milestone in Regulation" is the title which George O. May gives to his discussion of the action of the U. S. Supreme Court in upholding the decision of the Federal Communications Commission in the matter of the New York Telephone Company. Mr. May makes the observation that the real significance of the case lies "not in the direct results but in its effects on our institutions and way of life." This article will also appear in the February issue.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933.

Of *Journal of Land and Public Utility Economics* published quarterly at Madison, Wisconsin for November 1946, State of Wisconsin, County of Dane.

Before me, a notary public in and for the state and county aforesaid, personally appeared Mary E. Amend, who, having been duly sworn according to law, deposes and says that she is the Managing Editor of the *Journal of Land & Public Utility Economics* and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, University of Wisconsin, Sterling Hall, Madison, Wisconsin, Editor, Mary E. Amend, Sterling Hall, University of Wisconsin, Madison, Wisconsin, Managing Editor, same, Business Managers, same.

2. That the owner is: University of Wisconsin, Madison Wisconsin.

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5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is 900.

MARY E. AMEND, *Managing Editor*

Sworn to and subscribed before me this 28th day of September 1946.

(SEAL)

Mary A. Klusmann
(My commission expires 7-9-50)

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